Product
1.1 Thermakraft Covertek 407 Roof Underlay is a synthetic building underlay (sarking) for use under roof claddings. The product consists of a micro-porous water resistant film laminated to two layers of non-woven spun-bonded polyolefin.

Scope
2.1 Thermakraft Covertek 407 Roof Underlay has been appraised for use as a self-supporting roof underlay 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 masonry tile, metal tile or profiled metal roof cladding; 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 Covertek 407 Roof Underlay into their design in accordance with the declared properties and the instructions of Thermakraft Industries Australia Pty Ltd.

Building Regulations
National Construction Code Series (NCC) Building Code of Australia (BCA)

3.1 In the opinion of BRANZ, Thermakraft Covertek 407 Roof Underlay, 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 Covertek 407 Roof Underlay 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 Covertek 407 Roof Underlay will contribute to meeting this requirement. See Paragraphs 13.1 and 13.2.

3.2 This is an Appraisal of an Alternative Solution in terms of Building Code of Australia compliance.
Technical Specification

4.1 Thermakraft Covertek 407 Roof Underlay is a synthetic building underlay for use under roof claddings. The product consists of a micro-porous water resistant film laminated to two layers of non-woven spun-bonded polyolefin. Thermakraft Covertek 407 Roof Underlay is coloured white on the top and bottom faces.

4.2 The product is supplied in rolls 1.250 m wide x 20 m and 40 m long. The product is printed with the Thermakraft Covertek 407 Roof Underlay logo repeated along the length of the roll. The rolls are wrapped in clear polythene film.

Accessories

4.3 Accessories used with Thermakraft Covertek 407 Roof Underlay which are supplied by the installer are:
   - Fixings – stainless steel staples, clouts, screws or proprietary underlay fixings, or other temporary fixings to attach the roof underlay to the framing.

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 Covertek 407 Roof Underlay. 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 Thermakraft Covertek 407 Roof Underlay must not be exposed to the weather or ultra-violet light for a total of more than 7 days before being covered by the roof cladding system.

7.2 Thermakraft Covertek 407 Roof Underlay is intended for use as an alternative to conventional roof sarkings, which are fixed over timber or steel framed roofs in order to limit the entry of wind into the roof cavity, and to assist in the moisture management of the roof cladding system.

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

7.4 Thermakraft Covertek 407 Roof Underlay is suitable for use under roof claddings on buildings as a roof underlay or sarking as called up in BCA Volume 1 Part F1.6 and BCA Volume 2 Part 3.5.1.

7.5 Refer to Table 1 for details of the material properties of Thermakraft Covertek 407 Roof Underlay and the relevant AS/NZS 4200.1 classifications.
Table 1: Thermakraft Covertek 407 Roof Underlay Material Properties

<table>
<thead>
<tr>
<th><strong>AS/NZS 4200.1 Properties</strong></th>
<th><strong>Property Performance Requirement</strong></th>
<th><strong>Actual Property Performance</strong></th>
<th><strong>AS/NZS 4200.1 Classification</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Shrinkage</td>
<td>≤ 0.5%</td>
<td>Pass</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Absorbency</td>
<td>≥ 100 g/m²</td>
<td>Pass</td>
<td>High</td>
</tr>
<tr>
<td>Vapour Barrier</td>
<td>≤ 7 MN s/g</td>
<td>Pass</td>
<td>Low</td>
</tr>
<tr>
<td>Water Barrier</td>
<td>≥ 100 mm</td>
<td>Pass</td>
<td>High</td>
</tr>
<tr>
<td>Emittance</td>
<td></td>
<td>Non-reflective</td>
<td></td>
</tr>
<tr>
<td>Edge Tear and Tensile Strength</td>
<td>Edge tear:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Machine direction (average) &gt; 320 N</td>
<td>Extra Heavy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cross direction (average) &gt; 289 N</td>
<td>Extra Heavy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tensile strength:</td>
<td>Extra Light</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Machine direction (average) &gt; 6.0 kN/m</td>
<td>Light</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cross direction (average) &gt; 5.8 kN/m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability</td>
<td>≤ 5</td>
<td>Pass</td>
<td>Low</td>
</tr>
</tbody>
</table>

7.6 Thermakraft Covertek 407 Roof Underlay is suitable for use at pitches less than 10° (minimum 3°). When used at pitches less than 10°, Thermakraft Covertek 407 Roof Underlay must be installed horizontally. At pitches greater than 10°, Thermakraft Covertek 407 Roof Underlay can be installed vertically or horizontally and must span no greater than 1200 mm in one direction.

**Structure**

8.1 Thermakraft Covertek 407 Roof Underlay is suitable for use on buildings situated in non-cyclonic wind zones up to, and including N3.

**Durability**

**Serviceable Life**

9.1 Thermakraft Covertek 407 Roof Underlay is expected to have a serviceable life equal to that of the roof cladding provided it is not exposed to the weather or ultra-violet (UV) light for a total of more than 7 days. Thermakraft Covertek 407 Roof Underlay must be continuously protected from the weather and UV light in-service by a roof cladding that is maintained in accordance with the cladding manufacturer’s instructions.

**Flammability**

10.1 Thermakraft Covertek 407 Roof Underlay has an AS 1530 Part 2 flammability index of not greater 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 Covertek 407 Roof Underlay must be separated from flues and chimneys in accordance with the requirements of the BCA for the protection of combustible materials.
Fire Resistance

Bush Fire Zones

12.1 Where regulations require special attention in bushfire prone areas, it may be necessary for Thermakraft Covertek 407 Roof Underlay to comply with the requirements of AS 3959. The building designer is responsible for determining the compliance requirements.

Damp and Weatherproofing

13.1 Roof claddings installed over Thermakraft Covertek 407 Roof Underlay must meet the performance requirements of the BCA, e.g. Deemed to Satisfy roof claddings covered by the BCA, or roof claddings covered by a valid BRANZ Appraisal.

13.2 Thermakraft Covertek 407 Roof Underlay, 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 Covertek 407 Roof Underlay Technical Literature and this Appraisal, by competent tradespersons with an understanding of roof underlay installation.

Underlay Installation

15.1 Thermakraft Covertek 407 Roof Underlay must be fixed at maximum 300 mm centres to all framing members. The membrane must be pulled taut over the framing before fixing.

15.2 Thermakraft Covertek 407 Roof Underlay may be run vertically or horizontally at roof pitches greater than 10° and must be laid horizontally at roof pitches less than 10°. It must extend from the ridge and overhang the fascia board by 20-25 mm. Vertical laps must be no less than 150 mm wide. Horizontal laps must also be no less than 150 mm, with the direction of the lap ensuring that water is shed to the outer face of the underlay. End laps must be made over framing and be no less than 150 mm wide. To assist with achieving the correct lap dimension, Thermakraft Covertek 407 Roof Underlay has a 150 mm lap line printed continuously along the top face.

15.3 When fixing the product in windy conditions, care must be taken due to the large sail area created.

15.4 Any damaged areas of Thermakraft Covertek 407 Roof Underlay, 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

15.5 The Technical Literature must be referred to during the inspection of Thermakraft Covertek 407 Roof Underlay 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 Covertek 407 Roof Underlay 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, surface water absorbency in accordance with AS/NZS 4201.6 and pH of extract in accordance with AS/NZS 1301.421s. A range of these tests were completed before and after Thermakraft Covertek 407 Roof Underlay was exposed to ultra-violet light.

16.2 The Flammability Index of Thermakraft Covertek 407 Roof Underlay 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 An evaluation of the expected performance of Thermakraft Covertek 407 Roof Underlay in direct contact with metal roof cladding has been completed by BRANZ.
17.3 The practicability of installation of Thermakraft Covertek 407 Roof Underlay has been assessed by BRANZ and found to be satisfactory.
17.4 The Technical Literature, including installation instructions, has been examined by BRANZ and found to be satisfactory.

Quality

18.1 The manufacture of Thermakraft Covertek 407 Roof Underlay 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 Industries Australia Pty Ltd.
18.3 Building designers are responsible for the design of the building, and for the incorporation of the roof underlay into their design in accordance with the instructions of Thermakraft Industries Australia Pty Ltd.
18.4 Quality of installation is the responsibility of the installer in accordance with the instructions of Thermakraft Industries Australia Pty Ltd.

Sources of Information

In the opinion of BRANZ, **Thermakraft Covertek 407 Roof Underlay** 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 Industries Australia Pty 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. **Thermakraft Industries Australia Pty 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 **Thermakraft Industries Australia Pty 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** **Thermakraft Industries Australia Pty Ltd** or any third party.

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**For BRANZ**

Chelydra Percy
Chief Executive
Date of Issue:
12 November 2015