



BRANZ Appraised

Appraisal No. 1277 [2025]

THERMAKRAFT® RAINARMOR SELF ADHESIVE ROOF AND WALL UNDERLAY

Appraisal No. 1277 [2025]



BRANZ Appraisals

Technical Assessments of products for building and construction.



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Product

- 1.1 Thermakraft® RAINARMOR Self Adhesive Underlay is a self-adhesive, synthetic underlay for use over rigid wall underlays, under cavity or direct-fixed wall claddings, or over rigid sarking on pitched roofs.

Scope

Use over NZBC E2/AS1 or NASH Building Envelope Solutions Rigid Wall Underlays

- 2.1 Thermakraft® RAINARMOR Self Adhesive Underlay has been appraised for use as a flexible wall underlay when installed over fibre cement or plywood rigid wall underlays in accordance with NZBC Acceptable Solution E2/AS1 or NASH Building Envelope Solutions, Paragraph 9.1.7.2 and when used on buildings within the following scope:
 - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 for timber-framed buildings; or,
 - the scope limitations of NASH Building Envelope Solutions, Paragraph 1.1 for steel-framed buildings; and,
 - with a risk score of 0-20, calculated in accordance with NZBC Acceptable Solution E2/AS1 or NASH Building Envelope Solutions, Table 2; and,
 - with absorbent and non-absorbent direct fix wall claddings or wall claddings installed over an 18 mm minimum drained cavity; or,
 - with masonry veneer in accordance with NZBC Acceptable Solution E2/AS1 for timber-framed buildings or NASH Building Envelope Solutions for steel-framed buildings; and,
 - situated in NZS 3604 Wind Zones up to, and including, Extra High.

Proprietary Rigid Wall Underlays

- 2.2 Thermakraft® RAINARMOR Self Adhesive Underlay has also been appraised for use as a flexible underlay when used over proprietary rigid wall underlays. Refer to Paragraphs 2.3 and 2.4 for substrates covered by this Appraisal. Also refer to the relevant BRANZ Appraisal for scope limitations and to the system proprietor to confirm the suitability of Thermakraft® RAINARMOR Self Adhesive Underlay with their system.
- 2.3 Thermakraft® RAINARMOR Self Adhesive Underlay may be used over the following proprietary rigid wall underlay systems:
 - 4.5 mm thick HomeRAB™ Pre-Cladding and 6 and 9 mm thick RAB™ Board – refer to BRANZ Appraisal No. 611.
 - Ecoply Barrier® - refer to BRANZ Appraisal No. 827.
 - 10 and 13 mm thick GIB Weatherline® – refer to BRANZ Appraisal No. 1048.



Plywood Roof Sarking

- 2.4 Thermakraft® RAINARMOR Self Adhesive Underlay has also been appraised for use as a roof underlay over plywood roof sarking on timber and steel-framed buildings within the following scope:
- with minimum 17 mm thick CD grade H3.1 LOSP treated or H3.2 CCA treated plywood complying with AS/NZS 2269 installed at the same pitch as the roof cladding; and,
 - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with regards to building height and floor plan area; and,
 - the scope limitations of NASH Building Envelope Solutions, Paragraph 1.1 for steel-framed buildings; and,
 - with profiled metal roof cladding in accordance with NZBC Acceptable Solution E2/AS1 or NASH Building Envelope Solutions, Paragraph 8.4; and,
 - situated in NZS 3604 Wind Zones up to, and including, Extra High.

Specific Design

- 2.5 Designers are responsible for confirming the suitability of Thermakraft® RAINARMOR Self Adhesive Underlay for their specific design when used on other construction types or buildings outside the scope of this Appraisal. *[Note: These have not been assessed and are outside the scope of this Appraisal].*

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Thermakraft® RAINARMOR Self Adhesive Underlay, 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, B2.3.1 [b] 15 years and B2.3.2. Thermakraft® RAINARMOR Self Adhesive Underlay meets these requirements. See Paragraphs 9.1 and 9.2.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. When used as part of the wall cladding system, Thermakraft® RAINARMOR Self Adhesive Underlay contributes to meeting this requirement. See Paragraphs 12.1 and 12.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Thermakraft® RAINARMOR Self Adhesive Underlay meets this requirement.

Technical Specification

- 4.1 The product supplied by Kingspan Insulation NZ Limited is:
- **Thermakraft® RAINARMOR Self Adhesive** - a water-resistant film laminated between two layers of polypropylene microfibre cover fleece. Thermakraft® RAINARMOR Self Adhesive Underlay is coloured grey on the top surface and the bottom surface has a clear adhesive layer and a release backing paper which is split along the length of the roll. The product is supplied in standard size rolls 1.46 m wide by 31 m long but other widths and lengths are available on request. The product is printed with the Thermakraft® RAINAMOR logo repeated along the length of the roll. The rolls are supplied in a clear polythene bag.
- 4.2 Components used with Thermakraft® RAINARMOR Self Adhesive, which are supplied by the installer are:

Rigid Wall Underlays

- **Plywood** - must comply with AS/NZS 2269, be a minimum 7 mm thick and H3 treated in accordance with NZS 3602.
- **Fibre cement sheet** - must be minimum 6 mm thick and comply with AS/NZS 2908.2.
- **Proprietary wall underlays** - refer to Paragraphs 2.3 and 7.6.



Plywood Roof Sarking

- Plywood roof sarking - must comply with AS/NZS 2269, be a minimum 17 mm thick CD grade and H3.1 LOSP treated or H3.2 CCA treated in accordance with NZS 3602.

Primer

- Scotch® Super 77™ Multipurpose Adhesive - a clear spray-adhesive primer.

Handling and Storage

- 5.1 Handling and storage of the product, whether on-site 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 This Appraisal must be read in conjunction with:
- Product Data Sheet Thermakraft® RAINARMOR Self Adhesive, Issue 1.0, dated November 2024.
 - Installation Guide Thermakraft® RAINARMOR Self Adhesive, Issue 1.0, dated November 2024.
- 6.2 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® RAINARMOR Self Adhesive Underlay must not be exposed to the weather or ultraviolet [UV] light for a total of more than 120 days before being covered by the wall cladding or roofing.

Movement Joints

- 7.2 The designer is responsible for designing movement joints to accommodate thermal and moisture movement in the structure and cladding. This may require movement joints to be incorporated in the rigid underlay. Refer to BRANZ Bulletin No. 531 Designing for Thermal and Moisture Movement for further information.

Framing

- 7.3 Timber and steel framing must be provided in accordance with the requirements of the NZBC and the rigid wall underlay and cladding suppliers.
- 7.4 When Thermakraft® RAINARMOR Self Adhesive Underlay is used in conjunction with LOSP (light organic solvent preservative) treated timber, the solvent from the timber treatment must be allowed to evaporate prior to the installation of the underlay. This will generally be at least one week after the treated timber is incorporated into the building.

Walls with NZBC E2/AS1 or NASH Building Envelope Solutions Rigid Wall Underlays

- 7.5 Thermakraft® RAINARMOR Self Adhesive Underlay is suitable for use under wall claddings on timber or steel-framed buildings as a flexible wall underlay fixed over rigid underlays of plywood and fibre cement. The plywood and fibre cement must be in accordance with NZBC Acceptable Solution E2/AS1 or NASH Building Envelope Solutions, Paragraph 9.1.7.2.

Walls with Proprietary Rigid Wall Underlays

- 7.6 Thermakraft® RAINARMOR Self Adhesive Underlay can also be used on proprietary rigid wall underlay systems as listed in Paragraph 2.3. Refer to the relevant BRANZ Appraisal and the proprietor's Technical Literature for specific requirements. Sheet joints do not need to be taped as Thermakraft® RAINARMOR Self Adhesive Underlay provides the weather protection to the joint.



Structure

- 8.1 Thermakraft® RAINARMOR Self Adhesive Underlay is suitable for use in all Wind Zones of NZS 3604 up to, and including, Extra High when used as an overlay for rigid wall underlays.

Plywood Roof Sarking

- 8.2 Thermakraft® RAINARMOR Self-Adhesive Underlay may be used a roof underlay over plywood as specified in Paragraph 4.2. The plywood must be fixed to the roof framing as specified by the plywood supplier or to a Chartered Engineer's specification.

Durability

- 9.1 Thermakraft® RAINARMOR Self Adhesive Underlay meets code compliance with NZBC Clause B2.3.1 (a) not less than 50 years for wall underlays used where the cladding durability requirement or expected serviceable life is not less than 50 years, e.g. behind masonry veneer, and code compliance with NZBC Clause B2.3.1 (b) 15 years for wall underlays used where the cladding durability requirement is 15 years.

Serviceable Life

- 9.2 Provided it is not exposed to the weather or UV light for a total of more than 120 days, and provided the exterior cladding is maintained in accordance with the cladding manufacturer's instructions and the cladding remains weather-resistant, Thermakraft® RAINARMOR Self Adhesive Underlay is expected to have a serviceable life equal to that of the cladding.

Control of Internal Fire and Smoke Spread

- 10.1 As Thermakraft® RAINARMOR Self Adhesive Underlay is not exposed to view in occupied spaces, the product does not need to meet the requirements of NZBC Acceptable Solutions C/AS2, Paragraph 4.17.8 b), for the surface finish requirements of suspended flexible fabric.

Prevention of Fire Occurring

- 11.1 Separation or protection must be provided to Thermakraft® RAINARMOR Self Adhesive Underlay from heat sources such as fireplaces, heating appliances and chimneys. Part 7 of NZBC Acceptable Solution C/AS1 and NZBC Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

- 12.1 Thermakraft® RAINARMOR Self Adhesive Underlay must only be used behind wall claddings that meet the requirements of the NZBC, e.g. such as those covered by NZBC Acceptable Solution E2/AS1, NASH Building Envelope Solutions or wall claddings covered by a valid BRANZ Appraisal. Refer to Table 1 for material properties.
- 12.2 Thermakraft® RAINARMOR Self Adhesive Underlay, when installed in accordance with the Technical Literature and this Appraisal, will assist in the total cladding system's compliance with NZBC Clause E2.



Table 1: NZBC E2/AS1 and NASH Building Envelope Solutions, Table 23 (NZS 2295) Requirements

NZBC E2/AS1, Table 23 Roof and Wall Underlay Properties	Property Performance Requirement	Actual Property Performance*
Absorbency	≥ 150 g/m ²	Pass
Vapour Resistance	≤ 7 MN s/g	Pass
Water Resistance	≥ 100 mm	Pass
pH of Extract	≥ 6.0 and ≤ 9.0	Pass
Shrinkage	≤ 0.5%	Pass
Edge Tear Resistance	≥ 150 N Machine direction ≥ 100 N Cross direction	Pass Pass
Tensile Strength	≥ 3 kN/m Machine direction ≥ 1 kN/m Cross direction	Pass Pass
Air Barrier	Air resistance: ≥ 0.1 MN s/m ³	Pass

* Properties in Table 1 are for Thermakraft® RAINARMOR Self Adhesive Underlay only and do not include the substrate to which it is applied.

Installation Information

Installation Skill Level Requirement

- 13.1 Installation must always be carried out in accordance with the Thermakraft® RAINARMOR Self Adhesive Underlay Technical Literature and this Appraisal by, or under the supervision of, a Licensed Building Practitioner (LBP) with the relevant Licence Class.

Underlay Installation

- 14.1 Thermakraft® RAINARMOR Self Adhesive Underlay may be fixed horizontally or vertically.
- 14.2 Before Thermakraft® RAINARMOR Self Adhesive Underlay is applied, the substrate surfaces must be clean, dry and free from any surface contaminants such as dust and grease that may cause loss of adhesion. When installing Thermakraft® RAINARMOR Self Adhesive Underlay on difficult to bond substrates, Scotch® Super 77™ Spray Adhesive may be used. Ensure that the substrate is dry and free of dirt before applying the spray-adhesive. Apply a light spray/coating of the spray-adhesive onto the substrate. Wait for a minute to allow the spray-adhesive to become tacky. When tacky to the touch apply the underlay.
- 14.3 For walls, the product 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.
- 14.4 For horizontal installation, it is recommended that the height for the bottom layer of underlay is marked at regular intervals along the length of the substrate. The first [narrow] release paper is removed and the underlay is adhered to the substrate evenly along the element length. The second release paper is removed and the underlay is smoothed down and along the substrate.
- 14.5 For vertical installation, it is recommended that a vertical line is marked on the rigid substrate. Both release papers are removed from the top down and the underlay adhered to the rigid substrate.
- 14.6 For both installation orientations, care must be taken to avoid wrinkles or folds.
- 14.7 Horizontal, vertical and end 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 underlay.
- 14.8 After initial application of Thermakraft® RAINARMOR® Self Adhesive Underlay, it must be smoothed down with a 150 mm wide hard roller or plastic spreader to ensure adhesion to the substrate.



- 14.9 The underlay should be run over windows and doors openings and these left covered until the joinery is ready to be installed. Openings are formed in the underlay by cutting on a 45° diagonal from each corner of the penetration. The flaps of the cut underlay must be folded inside the opening and adhered to the exposed penetration framing. Excess underlay may be cut off flush with the internal face of the wall frame. Openings must be finished with flashing tape in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.5 b].
- 14.10 Any damaged areas of Thermakraft® RAINARMOR Self Adhesive 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, or by taping small tears using flashing tape.
- 14.11 Service penetrations, such as electrical cables and pipes, that pass through the Thermakraft® RAINARMOR Self Adhesive Underlay must be sealed.

Inspections

- 15.1 The Technical Literature must be referred to during the inspection of Thermakraft® RAINARMOR Self Adhesive 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® RAINARMOR Self Adhesive Underlay in accordance with NZBC Acceptable Solution E2/AS1, Table 23:
- tensile strength; and,
 - edge-tear resistance and resistance to water vapour transmission in accordance with AS/NZS 4200.1; and,
 - shrinkage in accordance with AS/NZS 4201.3; and,
 - resistance to water penetration in accordance with AS/NZS 4201.4; and,
 - surface water absorbency in accordance with AS/NZS 4201.6; and,
 - pH of extract in accordance with AS/NZS 1301.421s and air resistance to BS 6538.3.
- 16.2 A range of these tests were completed before and after Thermakraft® RAINARMOR Self Adhesive Underlay was exposed to UV light.

Other Investigations

- 17.1 A durability opinion has been given by BRANZ technical experts.
- 17.2 The practicability of installation of Thermakraft® RAINARMOR Self Adhesive Underlay 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® RAINARMOR Self Adhesive Underlay has not been examined by BRANZ, but details of the quality and composition of the materials used were obtained and found to be satisfactory. BRANZ undertakes an ongoing review of product quality on an inwards goods basis.
- 18.2 The quality of supply to the market is the responsibility of Kingspan Insulation NZ Limited
- 18.3 Building designers are responsible for the design of the building, and for the incorporation of the underlay into their design in accordance with the instructions of Kingspan Insulation NZ Limited
- 18.4 Quality of installation is the responsibility of the installer in accordance with the instructions of Kingspan Insulation NZ Limited.



Sources of Information

- AS/NZS 2269.0:2008 Plywood - Structural – Specifications.
- AS/NZS 2908.2:2020 Cellulose-cement products - Flat sheets.
- AS/NZS 4200.1:1994 Pliable building membranes and underlays - Materials.
- BS 6538.3:1987 Method for determination of air permeance using the Garley apparatus.
- BRANZ Bulletin No. 531 Designing for thermal and moisture movement.
- NASH Building Envelope Solutions: 2019 Light steel-framed buildings.
- NZS 2295:2006 Pliable, permeable building underlays.
- NZS 3602:2003 Timber and wood-based products for use in building
- NZS 3604:2011 Timber-framed buildings.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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13 January 2025

THERMAKRAFT® RAINARMOR
SELF ADHESIVE ROOF AND WALL
UNDERLAY



In the opinion of BRANZ, **Thermakraft® RAINARMOR Self Adhesive Roof and Wall 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 **Kingspan Insulation NZ 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. **Kingspan Insulation NZ 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 quality of work;
 - 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 **Kingspan Insulation NZ 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 **Kingspan Insulation NZ Limited** or any third party.

For BRANZ

Claire Falck

Chief Executive

Date of Issue:

13 January 2025