



PRODUCT CERTIFICATE

THIS IS TO CERTIFY

THERMAKRAFT STEELWRAP 290 WALL UNDERLAY

Certificate No: BRANZ-CM-1001
Date of Issue: 07 March 2018
Revision Date: 07 March 2021

CERTIFICATE HOLDER



Thermakraft Limited

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CERTIFICATION BODY



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Cheydra Percy
Chief Executive Officer
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DESCRIPTION OF PRODUCT

Thermakraft Steelwrap 290 Wall Underlay is a white coloured flexible synthetic wall underlay for use under wall cladding on timber and steel framed buildings.

USE OF PRODUCT

Thermakraft Steelwrap 290 Wall Underlay is for use as a flexible wall underlay for timber and steel framed buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with regards to building height and floor plan area; and,
- with direct fixed wall claddings, or with wall claddings installed over a drained cavity; or,
- with masonry veneer in accordance with NZBC Acceptable Solution E2/AS1; and,
- situated in NZS 3604 Wind Zones up to and including Very High when fixed directly to framing, and Extra High when fixed over a rigid air barrier.

Thermakraft Steelwrap 290 Wall Underlay is also for use:

- as an air barrier in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.4 [c]; or,
- 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, or as a slip layer over a rigid backing for stucco cladding in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.3.3.1 [b].

COMPLIES WITH THE FOLLOWING PROVISIONS OF THE NEW ZEALAND BUILDING CODE (NZBC)

Clause B2 DURABILITY: Performance B2.3.1 [a], not less than 50 years [for when the cladding durability requirement is not less than 50 years], B2.3.1 [b], 15 years [for when the cladding durability requirement is 15 years] and B2.3.2.

Clause C3 FIRE AFFECTING AREAS BEYOND THE FIRE SOURCE: Performance C3.4 [c].

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1.

SUBJECT TO THE FOLLOWING CONDITIONS AND LIMITATIONS

- Thermakraft Steelwrap 290 Wall Underlay must not be exposed to the weather or ultra violet light for more than 42 days before being covered by the wall cladding.
- Framing studs must be at a maximum of 600 mm centres. Timber framing must be in accordance with NZS 3604 or to a specific design. Steel framing must be to a specific design.



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REFERENCE DOCUMENTS

This Product Certificate must be read in conjunction with:

- BRANZ Appraisal No. 867 [2016] Thermakraft Steelwrap 290 Wall Underlay.
- Technical Literature: Thermakraft Steelwrap 290, dated May 2016.
- Technical Literature: Thermakraft Wall Underlay Installation Procedures, dated February 2018.

APPENDIX A - PRODUCT TECHNICAL DATA

A1: TYPE AND INTENDED USE OF PRODUCT

Thermakraft Steelwrap 290 Wall Underlay is for use as a flexible wall underlay 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.

Thermakraft Steelwrap 290 Wall Underlay is suitable for use under wall claddings as a wall underlay as called up in NZBC Acceptable Solution E2/AS1, Table 23 on timber framed buildings, including non-absorbent wall claddings such as vinyl and metal-based weatherboards in direct fixed situations. Thermakraft Steelwrap 290 Wall Underlay is suitable for use under cavity based wall claddings as an absorbent synthetic wall underlay as called up in NZS 2295, Table 2.4 on steel framed buildings.

A2: PRODUCT SPECIFICATION

Thermakraft Steelwrap 290 Wall Underlay is a synthetic building underlay manufactured by ultrasonically laminating a micro-porous water resistant film to a layer of non-woven spun-bonded polyolefin. Thermakraft Steelwrap 290 Wall Underlay is coloured white on the top and bottom faces and is printed with the Thermakraft 290 logo repeated along the length of the roll.

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 18.5 m and 36.5 m long. The rolls are wrapped in clear polythene film.

TABLE 1: NZBC E2/AS1 TABLE 23 (NZS 2295) REQUIREMENTS

NZBC E2/AS1 Table 23 (NZS 2295) Wall Underlay Properties	Property Performance Requirement	Actual Property Performance
Absorbency	≥ 100 g/m ²	Pass
Vapour Resistance	≤ 7 MN s/g	Pass
Water Resistance	≥ 20 mm	Pass
pH of Extract	≥ 6.0 and ≤ 9.0	Pass
Shrinkage	≤ 0.5%	Pass



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Mechanical	Edge tear and tensile strength	Edge tear [Average]: Machine direction = 187 N [Pass] Cross direction = 99.6 N ¹ Tensile strength [Average]: Machine direction = 3.9 kN/m [Pass] Cross direction = 2.0 kN/m [Pass]
Air Barrier	Air resistance: ≥ 0.1 MN s/m ³	Pass. Thermakraft Steelwrap 290 Wall Underlay is suitable for use as an air barrier.

Note 1: Pass of BRANZ criteria for edge tear resistance.

A3 INSTALLATION REQUIREMENTS

Installation must be carried out in accordance with the Thermakraft Steelwrap 290 Wall Underlay Technical Literature and NZBC Acceptable Solution E2/AS1.

APPENDIX B - OTHER RELEVANT TECHNICAL DATA

B1 STRUCTURE

Thermakraft Steelwrap 290 Wall Underlay is suitable for use in all Wind Zones of NZS 3604 up to, and including, Very High when used as a stand-alone flexible wall underlay, and all Wind Zones of NZS 3604 up to, and including, Extra High when used as an overlay for rigid building underlays.

B2 DURABILITY

Thermakraft Steelwrap 290 Wall Underlay meets code compliance with NZBC Clause B2.3.1 [a], not less than 50 years for building 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 building underlays used where the cladding durability requirement is 15 years. Thermakraft Steelwrap 290 Wall Underlay is expected to have a serviceable life equal to that of the cladding.

B3 CONTROL OF INTERNAL FIRE AND SMOKE SPREAD

Thermakraft Steelwrap 290 Wall Underlay has an AS 1530 Part 2 flammability index of not greater than 5 and therefore meets the requirements of NZBC Acceptable Solutions C/AS2 to C/AS6, Paragraph 4.17.8 b) for suspended flexible fabric used as an underlay to exterior cladding that is exposed to view in occupied spaces. It may therefore be used with no restrictions in all buildings.

B4 PREVENTION OF FIRE OCCURRING

Separation or protection must be provided to Thermakraft Steelwrap 290 Wall Underlay from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 – C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.



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APPENDIX C - BASIS OF CODEMARK CERTIFICATION

The following tests have been carried out on Thermakraft Steelwrap 290 Wall Underlay in accordance with NZBC Acceptable Solution E2/AS1, Table 23:

- 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
- pH of extract in accordance with AS/NZS 1301.421s
- air resistance to BS 6538.3.

Ultra-violet (UV) light ageing of wall underlays is a critical evaluation requirement to verify a products continued performance after site construction exposure. UV aging of Thermakraft Steelwrap 290 Wall Underlay was completed by BRANZ and a range of the tests detailed above were repeated after aging. BRANZ criteria to confirm a 42 day site construction exposure period is as follows:

- QUV accelerated weathering with UVA lamps following ASTM G154 for a total exposure time of 500 hours, or
- Xenon arc accelerated weathering following ASTM G155 for a total exposure time of 200 hours, or
- >1550 MJ/m² of natural solar radiation.

The Flammability Index of Thermakraft Steelwrap 290 Wall Underlay has been evaluated in accordance with AS 1530.2.

BRANZ Expert Judgement [Materials Scientist] confirmation of compliance to the NZBC Clause B2 Durability Performance Requirements.

The practicability of installation of Thermakraft Steelwrap 290 Wall Underlay has been assessed by BRANZ and found to be satisfactory.

The referenced Technical Literature has been examined by BRANZ and found to be satisfactory.

The quality of supply to the market is the responsibility of Thermakraft Limited.

Building designers are responsible for the design of the building, and for the incorporation of the wall underlay into their design in accordance with the instructions of Thermakraft Limited.

Quality of installation is the responsibility of the installer in accordance with the instructions of Thermakraft Limited.

SOURCES OF INFORMATION

- AS 1530.2 – 1993 Test for flammability of materials.
- AS/NZS 1301.421s: 1998 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 4201.1: 1994 Pliable building membranes and underlays – Methods of test – Resistance to dry delamination.
- AS/NZS 4201.2: 1994 Pliable building membranes and underlays – Methods of test – Resistance to wet delamination.
- AS/NZS 4201.3: 1994 Pliable building membranes and underlays – Methods of test – Shrinkage.
- AS/NZS 4201.4: 1994 Pliable building membranes and underlays – Methods of test – Resistance to water penetration.
- AS/NZS 4201.6: 1994 Pliable building membranes and underlays – Methods of test – Surface water absorbency.
- BS 6538.3: 1987 Method for determination of air permeance using the Garley apparatus.
- NZS 2295: 2006 Pliable, permeable building underlays.



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- NZS 3604: 2011 Timber-framed buildings.
- Acceptable Solutions and Verification Methods for New Zealand Building Code External Moisture Clause E2, Ministry of Business, Innovation and Employment, Third Edition July 2005 [Amendment 7, 01 January 2017].
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.



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