

Thermoseal® ResiWrap®

Refer to product table below for applicable product codes covered by this document

Issue **H**

Product Type & Application

Thermoseal® ResiWrap® is an Extra Heavy Duty, single-sided reflective aluminium foil and polyweave laminate; bonded using a fire-retardant adhesive. This product is a Water Barrier and Class 1 Vapour Barrier.

Compliance with the NCC

For use in Australia, when correctly specified and installed, this pliable building membrane:

NCC 2022

- **Material Performance Properties** - Meets the requirements of the NCC 2022 Volume 1 F3D3 for sarking-type material through compliance with AS 4200.1.
- **Non- Combustible Sarking-Type Material Exemption** - This product may be used in accordance with the non-combustible sarking-type material exemption stated in NCC 2022 Volume 1 C2D10(6)(f) and NCC 2022 Volume 2 H3D2(1)(f) – it does not exceed 1mm in thickness and has a Flammability Index ≤5.
- **BAL and Fire Hazard Properties** - Where sarking is required by AS 3959 for construction of buildings in bushfire-prone regions BAL 12.5-FZ, this product meets the requirements of section 3.10. It also meets the fire hazard property requirements for sarking-type materials in all locations except exposed installations in fire control rooms or fire-isolated exits, in NCC 2022 Volume 1 S7C7. The product meets these requirements by having a flammability index ≤5.

NCC 2019

- **Material Performance Properties** - Meets the requirements of the NCC 2019 Volume 1 Amend. 1 F1.6 for sarking-type material through compliance with AS 4200.1.
- **Non- Combustible Sarking-Type Material Exemption** - This product may be used in accordance with the non-combustible sarking-type material exemption stated in NCC 2019 Volume 1 Amend. 1 C1.9(e)(vi) and Volume 2 Amend. 1 3.7.1.1(f) – it does not exceed 1mm in thickness and has a Flammability Index ≤5.
- **BAL and Fire Hazard Properties** - Where sarking is required by AS 3959 for construction of buildings in bushfire-prone regions BAL 12.5-FZ, this product meets the requirements of section 3.10. It also meets the fire hazard property requirements for sarking-type materials in all locations except exposed installations in fire control rooms or fire-isolated exits, in NCC 2019 Volume 1 Amend. 1 Specification C1.10. The product meets these requirements by having a flammability index ≤5.

Limitations of Use

- **IMPORTANT:** Do Not Modify This Product: Compliance with the evidence of suitability data referenced in this document is only achieved by the product or configuration listed in this PTS.
- **WARNING:** This product is not structural - Do not walk on this product or place/store building materials or equipment on this product.
- This product does not have a Group Number in accordance with AS ISO 9705 and AS 5637.1 (NCC 2019 Volume 1 Amend. 1 Specification C1.10 Clause 4, NCC 2022 Volume 1 S7C4) and is not suitable as an exposed internal wall and ceiling lining.
- When used as a wall wrap this product is not suitable where a vapour permeable, pliable building membrane is specified for use in climate zones 6 to 8 in NCC 2019 Volume 1 Amend. 1 F6.2(a), and NCC 2019 Volume 2 Amend. 1 3.8.7.2(a), in climate zones 4-8 in NCC 2022 F8D3, ABCB Housing Provisions Standard 2022 10.8.1; or where the cladding manufacturer specifies a vapour permeable membrane.
- This product is not designed to withstand prolonged exposure to the elements - accordingly, the exterior cladding should be installed within 6 weeks in a wall application, or 2 weeks in a roof application. Products exposed during this period should be inspected for damage and repaired or replaced prior to installation of the exterior cladding to comply with the Product Warranty. Products exposed for longer than the recommended periods will not be covered by the Product Warranty.
- Additional mechanical fasteners should be considered for products exposed to harsh weather conditions prior to cladding.
- Products exposed to harsh weather conditions prior to cladding should be inspected for damage and replaced or repaired to ensure compliance with the Product Warranty.
- Prior to cladding, it is good practice to protect this product from UV exposure and harsh weather conditions which may cause damage.
- Not recommended for use with concrete, terracotta or slate tile roofs.
- This product is not suitable for submersion in water or continuous contact with soil.
- This product should not come into contact with wet concrete, or alkaline materials.

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Specific Design or Installation Instructions

- Isolate power before installation.
 - **WARNING:** This product contains aluminium foil which conducts electricity. To avoid electrocution, care should be taken to ensure that this product or conductive fasteners used to secure this product, do not come into contact or close proximity with electrical wiring during installation or use.
 - Suitable for use with metal sheet roofing.
 - When installed from ridge to gutter, it is recommended that the overlaps between adjacent layers of this product are taped to prevent the entry of water.
 - **Metal Roof Application Guidance:** This product may be prone to shrinkage at elevated temperatures and should be provided with 40mm of sag between each batten to prevent contact with the underside of the roof sheet. In cold climates or where there is a risk of condensation formation, it is recommended that a faced roofing blanket is considered as an alternative solution.
 - When installed for vapour and/or air control, this product should be sealed at overlaps (minimum 50mm), end laps, discontinuities and penetrations by suitable means such as heat and moisture resistant adhesive tape.
 - When installed for water control, this product must have overlaps of minimum 150mm, or 50mm and be taped on the exterior face.
 - When installed on a wall in the vertical direction - to maintain a water barrier it is recommended to seal at overlaps (minimum 50mm), end laps, discontinuities and penetrations by suitable means such as heat and moisture resistant adhesive tape.
 - **Application Suitability:** Application Suitability: Suitable for installation on the exterior side of the building frame in NCC 2019 Climate Zones 1 to 5, and NCC 2022 Climate Zones 1 to 3 where a vapour barrier is specified. Always check cladding manufacturer's guidance to confirm compatibility and refer to the Condensation Risk Consideration section on this document for further guidance.
 - This product should be installed with the semi-reflective or antiglare side facing outward.
 - Always follow the installation instructions in AS 4200.2, and those available on the Bradford website. For inclusion in BAL (Bushfire Attack Level) classified buildings, additionally adhere to the installation requirements of AS 3959.
 - To maintain the water barrier properties of the material it should not be punctured, creased, crushed, sharply folded or dragged over the building structure during installation.
- Condensation Risk Consideration:** This product is classified as a vapour barrier and is recommended to be positioned on the warm side of the construction to reduce the risk of condensation entrapment within the structure. As there are many factors which can influence condensation risk it is highly recommended that designers undertake a hygrothermal analysis to further reduce condensation risk. If in doubt, consider using a Class 4 Bradford Enviroseal vapour permeable product on the cold side of the construction.

Specific Design or Installation Instructions cont.

- Reflective R-values achieved by the product rely upon adjacent air spaces and will vary depending upon the design and installation. Refer to AS/NZS 4859.2.

For general installation guidance refer to the product installation guide at Bradfordinsulation.com.au

Evidence of Suitability

- Testing to AS 4200.1 across the following reports-
 - AWTa Report 17-001853 – *Resistance to Dry Delamination.*
 - AWTa Report 17-001853 – *Resistance to Wet Delamination.*
 - AWTa Report 17-001853 – *Moisture Shrinkage.*
 - Orora Report 24133 – *Folding Endurance.*
 - AWTa NATA Report 24-001656 – *Tensile Strength.*
 - AWTa NATA Report 24-001656 – *Edge Tearing.*
 - R&D Services Report RD17304 – *Emittance Classification.*
 - CSIRO Report 5979A – *Vapour Control Classification.*
 - AWTa Report 17-001853 – *Water Control Classification.*
 - Opal Research & Technology 28401 – *Air Barrier Classification.*
 - CSR Lab NATA Report NR-17205 – *Flammability Classification.*
 - CSR Lab Report R-20078 – *Thickness.*

Conditions of Storage & Maintenance

- Store in the original packaging in a cool, dry area, away from UV light (direct sunlight).
- Do not pressure clean or use mineral based cleaners on this product.

Refer to the product SUIs/MSDS at Bradfordinsulation.com.au for more information.

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Applicable Product Codes

WIDTH (mm)	LENGTH (m)	m ² PER ROLL	WEIGHT (kg)	PRODUCT CODE
1350	30	40.5	7.83	108879
1350	60	81	15.66	108004
1500	30	45	8.59	120121

Additional Product Data - AS 4200.1

Duty Classification (AS/NZS 4200.1)	Extra Heavy Duty	
Tensile Strength (AS/NZS 4200.1 and AS 1301.448s)	≥ 13 kN/m	Machine Direction
	≥ 10.5 kN/m	Lateral Direction
Edge Tear Resistance (AS/NZS 4200.1 and TAPPI T470)	≥ 90 N	Machine Direction
	≥ 90 N	Lateral Direction
Folding Endurance (AS 1301.423 and AS 4200.1)	Pass	
Water Control Classification (AS/NZS 4201.4)	Water Barrier	
Vapour Control Classification (ASTM E96)	Class 1 Vapour Barrier	
Air Control Classification (ISO 5636-5)	Air Barrier	
Emittance Classification (AS/NZS 4200.1 and AS/NZS 4201.5)	Reflective, ≤0.05	Inward Facing
	Non-Reflective, >0.15	Outward Facing
Flammability Index (AS 1530.2)	≤ 5 (Low)	
Electrical Conductivity	Conductive	
Resistance to Dry Delamination (AS/NZS 4201.1)	Pass	
Resistance to Wet Delamination (AS/NZS 4201.2)	Pass	
Moisture Shrinkage (AS/NZS 4201.3)	≤ 0.5 %	
Thickness	< 1.0 mm	

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Application Tables

Valid for NCC 2016 Volumes 1 & 2, and NCC 2019 Volume 2

	Brick Veneer Wall			Pitched Metal Roof Non-Ventilated Roof Space	
	Summer	Winter		Summer	Winter
	R_t 1.2	R_t 1.3		R_t 1.5	R_t 0.97*

R-Value Assumptions

Product performance is calculated in accordance with AS/NZS 4859.2 without thermal bridging, and the stated thermal performance is the depicted application's Total R-Value. The contribution of this product to the Total R-Value depends upon installation and environmental conditions, and will be reduced in those cavities which are ventilated. In brick veneer wall applications a minimum brick cavity air gap of 40mm and stud cavity air gap of 90mm is required to contribute to the thermal performance when no bulk insulation is installed in the stud cavity. Addition of bulk insulation to the wall stud cavity diminishes the reflective air gap R-Value contribution of this product.

In a roof application the reflective surface of this product should face inward toward the internal roof cavity. To achieve the stated thermal performance the reflective surface must face a minimum 100mm air cavity in the roof space and the upward facing antiglare surface must face a minimum 40mm cavity between the membrane and the roof cladding. No thermal bridging is considered in these calculations.

Calculations are based upon:

- A temperature difference of 6°C for heat flow out and 12°C for heat flow in.
- Reflective surface emittance of ≤ 0.05 , non-reflective surface emittance of ≥ 0.90 .