

Bradford Polyair Performa™ XHD

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

Issue I

Product Type & Application

Bradford Polyair Performa™ XHD is a range of extra heavy duty reflective insulation products. They are for use in roofs, walls and in sheds to reduce heat transfer through the building envelope.

Compliance with the NCC

For use in Australia, when correctly specified and installed, this product provides the following compliance:

NCC 2022

- **Thermal** - Complies with NCC 2022 Volume 1 J4D3(1) and ABCB Housing Provisions Standard 2022 13.2.2(1). This product meets the requirements of the NCC through compliance with AS/NZS 4859.1.
- **Fire Hazard Properties** - Meets the requirements of the NCC 2022 Volume 1, S7C7 for insulation materials. When assessed to AS/NZS 1530.3 this product does not exceed the 'Spread of Flame' or 'Smoke Developed' indices of Table S7C7.
- **Fire Hazard Properties - 4mm Polyair Performa™ 4.0XHD only** achieves a Group Number of 1 and $\text{SMOGR}_{\text{RC}} \leq 100 \text{ m}^2/\text{s}^2 \times 1000$, in accordance with AS ISO 9705 and AS 5637.1. It may be used as an exposed wall or ceiling lining where specified by the NCC 2022 Volume 1 S7C4.
- **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 .
- **Material Performance Properties** - Meets the requirements of the NCC 2022 Volume 1 F3D3 for sarking-type material through compliance with AS 4200.1.

NCC 2019

- **Thermal** - Complies with NCC 2019 Volume 1 Amend. 1 Section J1.2(a), NCC 2019 Volume 2 Amend. 1 Section 3.12.1.1(a), and all state-prescribed variations. This product meets the requirements of the NCC through compliance with AS/NZS 4859.1.
- **Fire Hazard Properties** - Meets the requirements of the NCC 2019 Volume 1 Amend. 1, Specification C1.10 Clause 7 for insulation materials. When assessed to AS/NZS 1530.3 this product does not exceed the 'Spread of Flame' or 'Smoke Developed' indices of Specification C1.10 Clause 7.

Compliance with the NCC cont. NCC 2019 cont.

- **Fire Hazard Properties - 4mm Polyair Performa™ 4.0XHD only** achieves a Group Number of 1 and $\text{SMOGR}_{\text{RC}} \leq 100 \text{ m}^2/\text{s}^2 \times 1000$, in accordance with AS ISO 9705 and AS 5637.1. It may be used as an exposed wall or ceiling lining where specified by the NCC 2019 Volume 1 Amend. 1. Specification C1.10 Clause 4.
- **BAL & 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 .
- **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.

Conditions of Storage & Maintenance

- Store in the original packaging in a cool, dry area, away from foodstuffs. Ensure packages are adequately labelled, protected from physical damage, and sealed when not in use. Avoid packaging being stored under UV light (direct sunlight) for long periods.
- Do not pressure clean or use mineral based cleaners on this product.

Refer to the product **SDS** at Bradfordinsulation.com.au for more information.

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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 material is not classified as non-combustible in accordance with AS1530.1 and is not suitable for use where non-combustible material is required.
- This product exceeds 1mm in thickness and does not meet the non-combustible sarking-type material exemption stated in NCC 2019 Volume 1 Amend. 1 C1.9(e)(vi), NCC 2022 Volume 1 C2D10(6)(f) and NCC 2019 Volume 2 Amend. 1 3.7.1.1(f), NCC 2022 Volume 2 H3D2(1)(f).
- **8.8mm product Polyair Performa™ 8.8 XHD** - 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 5.7C4) and is not suitable as an exposed internal wall and ceiling lining.
- Not suitable as a replacement for safety mesh or as a fall arrest system.
- 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 Volume 1 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 exposure to the elements - accordingly, it is recommended that the exterior cladding be installed within the same workday to comply with the product warranty.
- It is recommended that the installation of the membrane should not be commenced if the exterior cladding cannot be completed within the same workday.
- This foil facing product should not come into contact with wet concrete, or alkaline materials.
- Once compressed the material R-values are reduced and are no longer suitable to meet the requirements of a thermal break in accordance with NCC 2019 Volume 1 Amend. 1 J0.4, J0.5, NCC 2022 Volume 1 J3D5, J3D6 and NCC 2019 Volume 2 Amend. 1 3.12.1.2(c) and 3.12.1.4(d), ABCB Housing Provisions Standard 2022 13.2.3(7), 13.2.5(5).

Evidence of Suitability

- Testing to AS/NZS 4859.1 in the following reports -
 - AWTa NATA Report 20-006599.
 - AWTa NATA Report 20-000591.
- Testing to AS/NZS 1530.3 in the following reports -
 - AWTa NATA Report 21-000560.
 - AWTa NATA Report 21-000590.
 - AWTa NATA Report 21-004028.
 - AWTa NATA Report 21-004029.
- Testing and Professional Assessment, AS ISO 9705 and AS 5637.1 -
 - **4mm Polyair Performa™ 4.0 XHD Only** -
 - Ignis Labs Report IGNL-3201-06R I01R02
- Testing to AS/NZS 4200.1 across the following reports apply to **Polyair Performa™ 4.0 XHD** -
 - AWTa Report 21-000555 – *Resistance to Dry Delamination.*
 - AWTa Report 21-000556 – *Resistance to Wet Delamination.*
 - AWTa Report 21-000557 – *Moisture Shrinkage.*
 - Opal Report 27451-1 – *Folding Endurance.*
 - AWTa NATA Report 20-006601 – *Tensile Strength.*
 - AWTa NATA Report 20-006600 – *Edge Tearing.*
 - Surface Optics COA GT2535, GT2721 – *Emittance Classification.*
 - AWTa NATA Report 21-000559 – *Vapour Control Classification.*
 - AWTa Report 21-000561 – *Water Control Classification.*
 - AWTa NATA Report 20-006154 – *Flammability Classification.*
- Testing to AS/NZS 4200.1 across the following reports apply to **Polyair Performa™ 8.8 XHD** -
 - AWTa Report 21-000581 – *Resistance to Dry Delamination.*
 - AWTa Report 21-000582 – *Resistance to Wet Delamination.*
 - AWTa Report 21-000583 – *Moisture Shrinkage.*
 - Opal Report 27451-4 – *Folding Endurance.*
 - AWTa NATA Report 21-000584 – *Tensile Strength.*
 - AWTa NATA Report 21-003673 – *Edge Tearing.*
 - Surface Optics COA GT2719, GT2718 – *Emittance Classification.*
 - AWTa NATA Report 21-000586 – *Vapour Control Classification.*
 - AWTa Report 21-000587 – *Water Control Classification.*
 - AWTa NATA Report 21-000589 – *Flammability Classification.*

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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.
- **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.
- **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.
- Compatible for use with metal cladding, masonry, timber, slate, concrete and terracotta tiles.
- Can be used under battens.
- Recommended for use on framed walls, or roofs that are supported by safety mesh or rigid sheeting, unsupported tile roofs at ≤900mm spans, or unsupported metal roofs at ≤1200mm spans.
- When installed from ridge to gutter, improved water control can be achieved by sealing overlaps between adjacent layers with suitable means such as heat and moisture resistant adhesive tape, with a minimum 50mm overlap.
- This product should be installed with up to a 40mm sag between battens/rafters to reduce the risk of shrinkage.
- When installed for vapour 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.
- Improved water control at vertical joints can be achieved by sealing overlaps, end laps, discontinuities and penetrations by suitable means such as heat and moisture resistant adhesive tape with a minimum 50mm overlap.
- 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.

Specific Design or Installation Instructions cont.

- 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.
- Insulation should be installed so that it forms a continuous layer and abuts or overlaps adjoining insulation other than at supporting members such as columns, studs, noggings, joists, furring channels and the like where the insulation must butt against the member.
- Suitable for applications where the product is protected from UV light, water and wind pressure during and after installation.
- 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

Supplementary information - Additional installation guidance for this product can be found in AS3999.

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Applicable Product Codes

PRODUCT	R-VALUE (m ² K/W)	THICKNESS (mm)	WIDTH (mm)	LENGTH (m)	m ² PER ROLL	WEIGHT (kg)	PRODUCT CODE
Polyair Performa™ 4.0 XHD	R0.10	4	1350	22.25	30	10.3	152161^
Polyair Performa™ 4.0 XHD with 150mm flap	R0.10	4	1350	22.25	30	11.50	466844^
Polyair Performa™ 4.0 XHD	R0.10	4	1350	40	54	18.3	152429^
Polyair Performa™ 8.8 XHD	R0.20	8.8	1350	22.25	30	14.0	152472^
Polyair Performa™ 8.8 XHD with 150mm flap	R0.20	8.8	1350	22.25	30	14.3	193881^
Polyair Performa™ 8.8 XHD with 150mm flap	R0.20	8.8	1350	30	40.5	18.5	180852^

^ AS/NZS 1530.3 Test Report available.

R-values are determined in accordance with AS/NZS 4859.1. The contribution of the reflective air-gap is construction dependant and excluded from the declared R-value. The duty classification of the facing material does not influence the R-value.

Additional Product Data

Duty Classification (AS 4200.1)	Extra Heavy Duty	
Tensile Strength (AS 1301.448s and AS 4200.1)	≥ 13.0 kN/m	Machine Direction
	≥ 10.5 kN/m	Lateral Direction
Edge Tear Resistance (TAPPI T470 and AS 4200.1)	≥ 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 and AS 4200.1)	Water Barrier	
Vapour Control Classification (ASTM E96 and AS 4200.1)	Class 2 Vapour Barrier	
Emittance Classification (AS/NZS 4201.5 and AS 4200.1)	Reflective, ≤0.05	Inward Facing
	Semi-Reflective, >0.05 to ≤0.15	Outward Facing
Flammability Index (AS 1530.2 and AS 4200.1)	≤ 5 (Low)	
Electrical Conductivity (AS/NZS 3100 Mod. and AS 4200.1)	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 and AS 4200.1)	≤ 0.5 %	
Nominal Thickness	4.0 XHD: 4.0 mm 8.8 XHD: 8.8mm	
Material Thermal Resistance (AS/NZS 4859.1)	4.0 XHD: R0.10 8.8 XHD: R0.20	

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Additional Product Data cont.

Fire Hazard Properties (AS/NZS 1530.3)	4.0 XHD: Ignitability: 0 Spread of flame: 0 Heat Evolved: 0 Smoke Developed: 1 8.8 XHD: Ignitability: 0 Spread of flame: 0 Heat Evolved: 0 Smoke Developed: 2	When tested in accordance with AS/NZS 1530.3
Fire Hazard Properties (AS ISO 9705 and AS 5637.1) for 4mm Polyair Performa™ 4.0 XHD Only	Group Number of 1 and SMOGRA _{RC} ≤100 m ² /s ² x 1000 - 4mm Polyair Performa™ 4.0 XHD Only	When tested in accordance with AS ISO 9705 and rated to AS 5637.1
Hexabromocyclododecane (HBCD) content:	None	
Zero Ozone Depleting Potential (ODP)	Contains no ozone depleting substances.	