Bradford™

Product **Technical** Statement

Bradford Polyair Performa™ XHD

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

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:

- **Thermal** - Complies with NCC 2019 Volume 1 Section J1.2(a), NCC 2019 Volume 2 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** – **4mm Polyair Performa™ 4.0 XHD Only:** Achieves a Group Number of 1 and $SMOGRA_{RC} \leq 100\ m^2/s^2$ x 1000, when tested 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, Specification C1.10 Clause 4.
- **Fire Hazard Properties** - Meets the requirements of the NCC 2019 Volume 1, Specification C1.10 Clause 7 for insulation materials. When tested to AS/NZS 1530.3 this product does not exceed the 'Spread of Flame' or 'Smoke Developed' indices of Specification C1.10 Clause 7.
- **BAL & Fire Hazard Properties** - Meets the requirements of sarking for construction of buildings in bushfire-prone regions BAL 12.5-FZ, as per AS 3959, section 3.10; and 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 Specification C1.10.
- **Weatherproofing and Condensation Control** - Meets the requirements of the NCC 2019 Volume 1 parts F1.6, F6.2(a)(i), Volume 2 parts 3.5.2.4(b), 3.8.7.2(a)(i), and all State-prescribed variations, through compliance with AS/NZS 4200.1.

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.
- **WARNING:** This product is not structural - Do not walk on this product or place/store building materials or equipment on this product.

Specific Design or Installation Instructions continued.

- **Condensation Risk Consideration:** This product is classified as a vapour barrier, and when positioned on the cold side of the construction it may increase 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.
- Suitable for use with metal sheet roofing.
- Suitable for use with concrete or terracotta tile roofs.
- Recommended for use on framed walls or roofs that are supported by safety mesh or rigid sheeting, or unsupported roofs up to 1200mm centres.
- 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.
- 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, the product should be continuously sealed at all discontinuities, end laps, joints and penetrations by suitable means such as heat and moisture resistant adhesive tape.
- When installed as an air barrier, the product should be sealed at overlaps, end laps, discontinuities and penetrations by suitable means such as heat and moisture resistant adhesive tape.
- **Application Suitability - Supported & unsupported roof construction / Cavity construction in NCC Climate Zones 1 to 5:** Suitable for installation on the exterior side of the building frame in NCC Climate Zones 1 to 5. Always check cladding manufacturer's guidance to confirm compatibility and refer to the Condensation Risk Consideration section on this document for further guidance. Where possible, the incorporation of a cavity for drainage and drying is recommended.
- 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.
- Reflective R-values achieved by the product rely upon adjacent air spaces and will vary between installation designs. Refer to AS/NZS 4859.2.

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Specific Design or Installation Instructions continued.

- 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 interior applications where the product is protected from UV light, water and wind pressure during and after installation.

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.

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.
- 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.
- **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, Specification C1.10 Clause 4) and is not suitable as an exposed wall and ceiling lining.
- This product is not suitable where a vapour permeable, pliable building membrane is specified for use in climate zones 6, 7, and 8 in NCC 2019 Volume 1, Part F6.2(a)(iii), and NCC 2019 Volume 2, Part 3.8.7.2(a)(iii); or where the cladding manufacturer specifies a vapour permeable membrane.
- This product is not designed to withstand prolonged, direct exposure to the elements - accordingly, the exterior cladding should be installed without delay. Products exposed to harsh weather conditions should be inspected for damage prior to installation of the exterior cladding. Damaged product should be repaired or replaced to comply with the product warranty.
- Not suitable as a replacement for safety mesh or as a fall arrest system.
- 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 J0.4(b) and J0.5(b), and NCC 2019 Volume 2 3.12.1.2(c)(iii) and 3.12.1.4(d)(ii).

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*

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 SUIS/MSDS at Bradfordinsulation.com.au for more information.

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Applicable Product Codes

PRODUCT	R-VALUE (m^2K/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	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

R-values apply to the uncompressed thickness.

Additional Product Data

Duty Classification (AS/NZS 4200.1)	Extra Heavy Duty	
Tensile Strength (AS/NZS 4200.1 and AS 1301.448s)	≥ 13.0 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
Water Control Classification (AS/NZS 4201.4)	Water Barrier	
Vapour Control Classification (ASTM E96)	Class 2 Vapour Barrier	
Emittance Classification (AS/NZS 4200.1 and AS/NZS 4201.5)	Reflective, ≤0.05	Inward Facing
	Semi-Reflective, >0.05 to ≤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 %	
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	
Fire Hazard Properties	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 Part 3 - 1999