

Thermoseal® 753 HD (Sarking-Type Material)

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

Issue I

Product Type & Application

Thermoseal® 753 HD is a Heavy Duty sarking-type product for use under commercial metal deck roofs, and in commercial and residential walls. It is a reinforced paper based reflective aluminium foil and semi-reflective antiglare foil laminate; bonded using a fire-retardant adhesive. This product is a Water Barrier and Class 1 Vapour Barrier.

It can be installed as a facing material for Bradford Glasswool Building Blanket; either adhered or laid separately. See page 5 of this document for more details.

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.
- **Reflective Insulation** – Complies with the reflective insulation emittance requirements in ABCB Housing Provisions Standard 2022 section 13.2.5 for External Walls for a surface exposed to the sun during construction.

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-Combustibility 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.

Compliance with the NCC cont. NCC 2019 cont.

- **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.

For details on compliance when this facing material is used in conjunction with a Bradford bulk insulation board or blanket, refer to the individual Product Technical Statement. For details on use with CSR Bradford Glasswool Building Blanket refer to page 5 of this document.

Evidence of Suitability

- Testing of the sarking-type material only to AS 4200.1 across the following reports –
 - AWT Report 18-000294 – *Resistance to Dry Delamination.*
 - AWT Report 18-000293 – *Resistance to Wet Delamination.*
 - AWT Report 18-000292 – *Moisture Shrinkage.*
 - Orora Report 24133 – *Folding Endurance.*
 - AWT NATA Report 24-001259 – *Tensile Strength.*
 - AWT NATA Report 24-001259 – *Edge Tearing.*
 - R&D Services Report RD17258 – *Emittance Classification.*
 - AWT Report 24-000131 – *Emittance Classification.*
 - R&D Services Report RD19028-R3 – *Vapour Control Classification.*
 - AWT Report 18-000295 – *Water Control Classification.*
 - Opal Research & Technology 28401 – *Air Barrier Classification.*
 - CSR Lab NATA Report NR-17214 – *Flammability Classification.*
 - CSR Lab Report R-20078 – *Thickness.*

Testing details apply to the sarking product only. For details of CSR Bradford-manufactured faced Glasswool or Rockwool completed products, refer to their individual Product Technical Statements, or to page 5 below for faced Glasswool Building Blanket.

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

Thermoseal® 753 HD (Sarking-Type Material)

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 as a facing material for bulk insulation.
- Compatible for use with metal cladding, masonry, timber, slate, concrete and terracotta tiles.
- **Metal Roof Application Guidance:** This product should be provided with 40mm of sag between each batten/purlin 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 from ridge to gutter, it is recommended that the overlaps between adjacent layers of this product are taped to prevent the entry of water.
- 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:** 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.
- 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.
- This product should be installed with the semi-reflective or antiglare side facing outward.
- **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.

- 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 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

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.
- When combined with bulk insulation, the fire performance properties of the final system should be re-assessed by a certifying authority if the application is not defined on page 5 of this document, or in other Bradford PTSs.
- This product is not suitable for use in HVAC applications. Thermoseal® 750 HD is recommended for HVAC use.
- When used independently this product does not have a Group Number and is not suitable for use as an exposed wall or ceiling lining. Refer to page 5 of this document for details on use in such applications with CSR Bradford Glasswool Building Blanket.
- 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.

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Limitations of Use cont.

- This product is not suitable for submersion in water or continuous contact with soil.
- This foil facing product should not come into contact with wet concrete, or alkaline materials.

Applicable Product Codes

WIDTH (mm)	LENGTH (m)	m ² PER ROLL	WEIGHT (kg)	PRODUCT CODE
1350	30	40.5	17.3	108751
1350	60	81	34.28	15091
1350	800	1080	453.6	170363

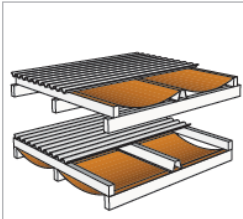
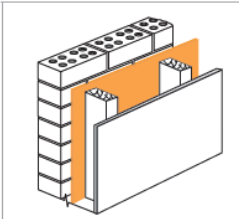
Additional Product Data – AS 4200.1

Duty Classification (AS 4200.1)	Heavy Duty	
Tensile Strength (AS 4200.1 and AS 1301.448s)	≥ 12.5 kN/m	Machine Direction
	≥ 7.5 kN/m	Lateral Direction
Edge Tear Resistance (AS 4200.1 and TAPPI T470)	≥ 80 N	Machine Direction
	≥ 80 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 4200.1 and AS/NZS 4201.5)	Reflective, ≤0.05	Inward Facing
	Semi-Reflective, >0.05 to ≤0.15 Emittance is ≤0.1 and meets the reflective insulation requirements of External Walls for a surface exposed to the sun during construction in ABCB Housing Provisions Standard 2022, 13.2.5.	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

	Flat ($\leq 5^\circ$) Metal Roof Ventilated Roof space	
	Summer	Winter
	R_t 1.4	R_t 0.7
	Brick Veneer Wall	
	Summer	Winter
	R_t 1.6	R_t 1.8

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 , semi-reflective surface emittance of ≥ 0.09 .

Thermoseal® 753 HD (Facing on Building Blanket)

Product Type & Application

Thermoseal® 753 HD is a Heavy Duty sarking-type product for use under commercial metal deck roofs, and in commercial and residential walls. It is a reinforced paper based reflective aluminium foil and semi-reflective antiglare foil laminate; bonded using a fire-retardant adhesive. This product is a Water Barrier and Class 1 Vapour Barrier.

It can be installed as a facing material for Bradford Glasswool Building Blanket as an exposed wall or ceiling lining; either adhered to the Glasswool Blanket in a CSR approved facility or laid separately with Bradford Building Blanket on site. This section details these applications.

Compliance with the NCC

For use in Australia, when correctly specified and installed, this product faced to a CSR Bradford Glasswool Building Blanket provides the following compliance:

NCC 2022

- **Thermal** - Refer to the CSR Bradford Glasswool Building Blanket PTS for details on thermal compliance of the insulation.
- **Fire Hazard Properties** – When used in specified CSR Bradford Glasswool systems detailed on this PTS only: This product 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** - When used in specified CSR Bradford Glasswool systems detailed on this PTS only: This product achieves a Group Number and SMOGRA_{RC} in accordance with AS ISO 9705 and AS 5637.1. It may be used as an exposed internal wall or ceiling lining where specified by the NCC 2022 Volume 1 S7C4.

NCC 2019

- **Thermal** - Refer to the CSR Bradford Glasswool Building Blanket PTS for details on thermal compliance of the insulation.
- **Fire Hazard Properties** – When used in specified CSR Bradford Glasswool systems detailed on this PTS only: This product achieves a Group Number and SMOGRA_{RC} in accordance with AS ISO 9705 and AS 5637.1. It may be used as an exposed internal wall or ceiling lining where specified by the NCC 2019 Volume 1 Amend. 1 Specification C1.10 Clause 4.
- **Fire Hazard Properties** – When used in specified CSR Bradford Glasswool systems detailed on this PTS only: This product 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.

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.
- Group number and SMOGRA_{RC} ratings only apply when the installation requirements listed under 'Specific Design or Installation Instructions' are met.
- This product is not suitable for use in HVAC applications. Thermoseal® 750 HD is recommended for HVAC use.
- 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.
- Products exposed to harsh weather conditions prior to cladding should be inspected for damage and repaired or replaced 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.
- The foil facing product should not come into contact with wet concrete, or alkaline materials.
- This product is not suitable for submersion in water or continuous contact with soil.

Evidence of Suitability

- Testing and Professional Assessment, AS ISO 9705 and AS 5637.1 for Thermoseal 753 HD on Bradford Glasswool Building Blankets listed in 'Additional Product Data' on this PTS –
 - BRANZ Assessment FC11516.
- Professional Assessment, AS/NZS 1530.3 for Thermoseal 753 HD on Bradford Glasswool Building Blankets listed in 'Additional Product Data' on this PTS –
 - Warringtonfire Assessment FAS200045.

Testing details apply to the facing material with CSR Bradford Glasswool Building Blanket only.

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.

Thermoseal® 753 HD (Facing on Building Blanket)

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.
- **Caution:** Electrical cables and equipment partially or completely surrounded with bulk thermal insulation may overheat and fail.
- 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.
- **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.
- Facings may be either adhered to the Glasswool in a CSR approved facility with an approved adhesive, or laid separately prior to the installation of the bulk thermal insulation.
- The facing may be supported by steel wire mesh in the installation, as long as the mesh can support it under ambient conditions.
- Screw or pin fastener spacing should not be larger than a 350mm x 350mm square grid.
- Lap joints in the facing may be taped or left un-taped depending upon the application requirements.
- Facings with Antiglare must have the Antiglare on the non-exposed surface.
- 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 direct UV light, water and wind pressure during and after installation.
- Suitable for underslab concrete roof/soffit applications in unconditioned spaces.
- 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 depending upon the design and installation. Refer to AS/NZS 4859.2.

Specific Design or Installation Instructions cont.

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 AS 3999.

Thermoseal® 753 HD (Facing on Building Blanket)

Additional Product Data

When manufactured and installed in accordance with CSR Bradford guidance Bradford Thermoseal 753 HD may be used with CSR Bradford Glasswool Building Blankets listed below, and achieve the following fire hazard properties-

FACING MATERIAL	GLASSWOOL – CSR BRADFORD BUILDING BLANKET	GROUP NUMBER (AS 5637.1)	SMOGR _{RC} [m ² /s ² x 1000] (AS 5637.1)	FIRE HAZARD PROPERTIES (AS/NZS 1530.3)
Thermoseal 753 HD	R1.0 50mm R1.3 60mm R1.5 75mm R1.8 80mm R2.0 90mm R2.3 100mm R2.5 (HP) 100mm R2.5 110mm R3.0 130mm R3.6 (HP) 130mm R3.3 140mm R3.6 145mm R4.2 175mm	1	≤ 100	<ul style="list-style-type: none"> • Ignitability: 0 • Spread of flame: 0 • Heat Evolved: 0 • Smoke Developed: 1

For more details on Bradford Building Blanket, refer to PTS029. Note that once a non-combustible building blanket has a facing adhered it is no longer deemed a non-combustible material.