

# SILVERSARK® xR

EXTRA HEAVY DUTY

DOUBLE SIDED REFLECTIVE INSULATION EXTRA R-VALUE



HIGH WATER BARRIER - MEDIUM VAPOUR BARRIER

Product Code: XHD-XR | I/N: 0810963, 0810964

DECLARED TOTAL SYSTEM R-VALUES

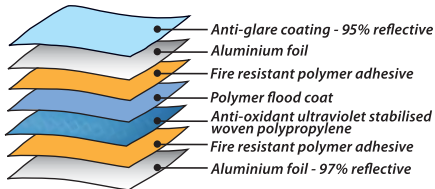
SILVERSARK® xR is an Extra Heavy Duty double-sided radiant barrier, designed for use under metal deck roofs where temperatures can exceed 80°C, and with battened out cladding where an extra air space is created. It is a High Water Barrier, Medium Vapour Barrier product, suitable for use in all roof and wall applications. Ideal for steel and timber framed roofs and brick veneer walls, it provides extra R-value from inward and outward facing reflective surfaces when used in conjunction with adjacent air spaces.

Roof spaces fitted with SILVERSARK® xR will benefit from controlled ventilation, which assists in controlling excess heat in summer and moisture ingress in winter.

- ✓ High Water Barrier
- ✓ Extra R-value
- ✓ Superior heat resistance
- ✓ Medium Vapour Barrier
- ✓ High strength, light weight
- ✓ Flexible anti-flap

## Construction

SILVERSARK® xR is a flexible seven layer product made with a combination of woven polymer substrate, aluminium foil, and fire-resistant polymer adhesive. It has reflective foil surfaces on both sides, one side with unique anti-glare coating for ease of installation. The internal membrane structure is highly flexible and resilient. This has two benefits:



- 1) "Flapping" is minimised under tile roofs in high wind conditions.
- 2) Stress within the structure due to flapping, thermal expansion and shrinkage is significantly reduced, markedly improving the durability of the product.

Ametalin utilises Advanced Laminating Technology; the polymer adhesive remains tacky for an indefinite period and provides superior resistance to heat, fire and delamination.

In order to minimise shrinkage after installation, SILVERSARK® xR is pre-shrunk during the manufacturing process.

## Application

SILVERSARK® xR is designed for use as insulation and condensation control under metal and tile roofs in residential, commercial and office buildings in all regions of Australia. It is also suitable for use as a wall wrap, particularly in brick veneer systems.

Install SILVERSARK® xR facing an air space on either side for increased reflective R-value. SILVERSARK® xR reduces the need for additional wall insulation, and increases overall thermal performance of the building system. Use in conjunction with SILVERBATTS™ and PLEATED SILVERBATTS™ to create multiple reflective air spaces and incrementally increased thermal performance.

NOTE: High Water Barrier, Medium Vapour Barrier wall wraps are suitable for wet tropical climate zones. Durability may be affected by environmental factors, including chemical and airborne pollutants, if used in industrial or farm buildings.

## Tear Resistance

SILVERSARK® xR is an extremely lightweight product with superior tear resistance. SILVERSARK® xR is guaranteed to meet or exceed minimum performance levels for Extra Heavy Duty rating required under AS/NZS 4200.1:1994.

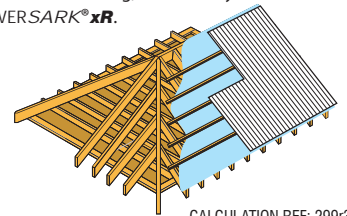
	Minimum Value*	Actual Test Value
Machine direction edge tear resistance	90 N	517 N / 25 mm
Lateral direction edge tear resistance	90 N	480 N / 25 mm

\* Minimum value required to qualify as Extra Heavy Duty under AS/NZS 4200.1:1994

The contribution of this product to the total R-value depends on installation and environmental conditions. The R-value will be reduced in the event of the accumulation of dust on upward facing surfaces and in those cavities that are ventilated.

### METAL ROOF

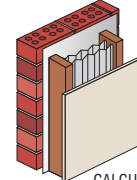
22° pitched metal roof, unventilated attic, plasterboard ceiling, with one layer of SILVERSARK® xR.



WINTER R<sub>T</sub> 1.2 SUMMER R<sub>T</sub> 1.9

### BRICK VENEER

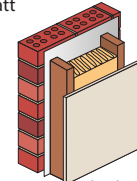
with one layer of SILVERSARK® xR + two layers of PLEATED SILVERBATTS™



WINTER R<sub>T</sub> 4.0 SUMMER R<sub>T</sub> 3.5

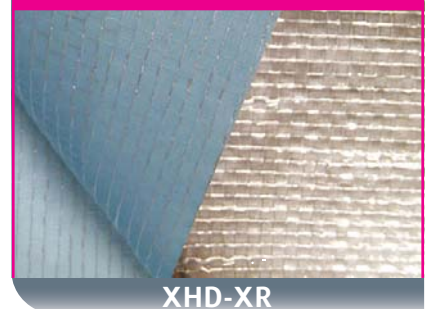
### BRICK VENEER

with one layer of SILVERSARK® xR + R2.0 Fibrous Batt



WINTER R<sub>T</sub> 3.2 SUMMER R<sub>T</sub> 2.9

SILVERSARK® xR



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## Classification

SILVERSARK® xR classifications in accordance with AS/NZS 4200.1:1994

PRODUCT		SILVERSARK® xR	AS/NZS 4200.1:1994
FLAMMABILITY INDEX	AS 1530.2-1993	Low	Low ≤ 5
DUTY	AS/NZS 4200.1:1994	Extra Heavy	Classification
EMITTANCE	AS/NZS 4201.5:1994	Bright side: 0.03 Anti-glare side: 0.07	Value
REFLECTIVITY		Bright side: 97% Anti-glare side: 93%	Value
RESISTANCE TO WATER PENETRATION	AS/NZS 4201.4:1994	High	High
VAPOUR BARRIER	ASTM E96	Medium, PROCEDURE B, WET CUP TEST	Classification
MACHINE DIRECTION TENSILE STRENGTH	AS 1301.448s-91	15.9 kN/m	Min 13.0 kN/m
LATERAL DIRECTION TENSILE STRENGTH	AS 1301.448s-91	14.2 kN/m	Min 10.5 kN/m
MACHINE DIRECTION EDGE TEAR	TAPPI T 470 om-89	517 N	Min 90 N
LATERAL DIRECTION EDGE TEAR	TAPPI T 470 om-89	480 N	Min 90 N
RESISTANCE TO DRY DELAMINATION	AS/NZS 4201.1:1994	Pass	Pass
RESISTANCE TO WET DELAMINATION	AS/NZS 4201.2:1994	Pass	Pass
SHRINKAGE (REPEATED WETTING & DRYING)	AS/NZS 4201.3:1994	< 0.0%	< 0.5%

WATER VAPOUR TRANSMISSION RATE: 1.0 g/m<sup>2</sup>·24hr (23°C, 50% RH)

AMETALIN CLASSIFICATION: MEDIUM VAPOUR BARRIER

## Vapour Barrier Properties

SILVERSARK® xR has a Water Vapour Transmission (WVT) rate of 1.0 grams per square metre per 24 hours tested at 23°C, 50% Relative Humidity (RH). Vapour Resistance 128.4 MN·s/g. Ametalin classification is Medium Vapour Barrier.

## NCC/BCA Compliant

SILVERSARK® xR complies with AS/NZS 4859.1:2002/Amdt 1:2006 and AS/NZS 4200.1:1994, and therefore meets all the requirements of the National Construction Code and Building Code of Australia for insulation and pliable building membranes.

## BUSHFIRE ATTACK LEVELS

SILVERSARK® xR complies with AS 3959-2009 Construction of buildings in bushfire-prone areas for use in roof systems BAL – LOW to BAL – 40 and wall systems BAL – LOW to BAL – FZ.

## Total System R-values

R-values apply to typical conditions for mainland Australian capital cities and have been calculated by an independent consulting engineer in accordance with AS/NZS 4859.1:2002/Amdt 1:2006. For detailed design of building systems, seek advice based on actual site conditions from a qualified licensed engineer.

## Reflectivity

SILVERSARK® xR is made with aluminium foil laminates with reflectivity of 97% and emissivity of 0.03 to one side and 93% reflectivity and emissivity of 0.07 to the other, in compliance with AS/NZS 4200.1.6.3.

## Storage

This product should be stored under cover in a clean, dry place in the pack provided.

## Dimensions

SILVERSARK® xR is sold in sizes:

1350 mm x 60 m (81 m<sup>2</sup>)

1350 mm x 30 m (40.5 m<sup>2</sup>)

1500 mm x 30 m (45 m<sup>2</sup>)

## Specification Notes

When specifying, state the following:

**Product Name:** SILVERSARK® xR

The insulation to be installed shall be SILVERSARK® xR double-sided reflective laminate with anti-glare, emittance bright side 0.03, anti-glare side 0.07. Product is manufactured by Ametalin and shall be installed in accordance with AS/NZS 4200.2: 1994 Pliable Building Membranes and Underlays, Part 2: Installation Requirements.

Emittance Bright Side: 0.03, Anti-glare Side: 0.07

Water Vapour Transmission (WVT): 1.0 g/m<sup>2</sup>·24hr

Vapour Resistance: 128.42 MN·s/g

Vapour Barrier Classification: Medium

Water Barrier Classification: High

Duty: Extra Heavy in accordance with AS/NZS 4200.1:1994

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Manufacturers of building membranes | insulation products | flexible packaging



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## Health and Safety Information

Ametalin has assessed SILVERSARK® xR according to the criteria outlined in the *National Occupational Health and Safety Commission (NOHSC):1008 (1998)* and *NOHSC: 1005 (1999)*. As a result of the assessment, this product is classified as non-hazardous according to the NOHSC criteria. To reduce risk of UV damage when installing this product, wear protective clothing, safety glasses and sunscreen, and work in the shade wherever practical.

## Installation

### ELECTRICAL SAFETY PRECAUTIONS - BEFORE YOU START:

**Ametalin stresses the importance of safe installation practices for foil-based insulation as critical to installer and consumer safety. Aluminium Foil Insulation Association Inc. (AFIA) has prepared Work Method Statements and Hazard Management forms to assist contractors and installers in safe installation of reflective insulation products. These documents are available under 2009 AFIA WMS & Hazard Management, at [www.afia.com.au/news/health-and-safety/](http://www.afia.com.au/news/health-and-safety/).**

SILVERSARK® xR should be installed in accordance with AS/NZS 4200.2: 1994 *Pliable Building Membranes and Underlays, Part 2: Installation Requirements*.

### GENERAL

SILVERSARK® xR is not designed to withstand prolonged direct exposure to the elements. Accordingly, the outer construction envelope should be installed without delay. Aluminium foil should not come into contact with wet concrete or mortar, as the aluminium is susceptible to alkali corrosion. If installed within 500 metres of the sea, or in a non-residential building where foil surfaces may be exposed to a corrosive atmosphere (including agricultural sheds), foil surfaces should face an enclosed, un-vented air space. To ensure optimum thermal insulation performance, as well as satisfactory durability, an air space adjacent to each side of the product is recommended.

### ROOFS

In roofs, SILVERSARK® xR is to be installed as a continuous membrane, blue anti-glare side facing out and laid loosely over rafters with a minimum drape of 40 mm. For larger rafter spacings in metal roofs, the drape should be increased proportionally. Joins must be overlapped by no less than 150 mm with all top layers to the outside of bottom layers to facilitate drainage. In purlin construction, end rolls must be overlapped by 600 mm. AS 3959-2009 *Construction of buildings in bushfire-prone areas* requires that all sarking products be installed under roof battens.

When SILVERSARK® xR is used under tiles it must be installed under battens in order to comply with AS/NZS 4200.2:1994. Under metal roofing the preferred installation is also under the battens. SILVERSARK® xR can be installed above the battens, but performance may be reduced and problems may arise under certain environmental conditions. Specifically, condensation forming under the roof may pool behind battens due to a breach in the integrity of the SILVERSARK® xR membrane; condensation may also form on the underside of SILVERSARK® xR where contact is made with the roofing material. Adequate slack in the material must be provided, equal to the specified sag, to accommodate shrinkage of SILVERSARK® xR due to high temperatures in close

proximity to the metal roofing.

### FRAMED WALLS & GABLES

In framed walls and gables, SILVERSARK® xR should be installed horizontally as a continuous membrane by fixing to all framing members with the blue anti-glare side facing out. SILVERSARK® xR should extend from the top plate to the bottom plate on concrete slabs or bearers in timber construction. Fixings are to be no more than 450 mm apart and should be galvanised clouts or staples for fastening to timber construction and tek screws for fastening to steel constructions. In high wind areas, it is recommended to install using flat punched multi-point fasteners or cap screws. Horizontal, vertical and end overlaps must be 150 mm if not taped or 50 mm taped with Ametalin Insulation/Ducting Tape, with all top layers overlapping the outside of lower layers to prevent water ingress. Stagger any vertical overlaps. Any damage made to SILVERSARK® xR during installation including holes and tears must be repaired.

Where SILVERSARK® xR is intended to act as a vapour barrier, tape and seal all overlapped joins, penetrations and discontinuities with Ametalin Insulation/Ducting Tape to prevent air movement. When SILVERSARK® xR is installed as a sarking membrane, all penetrations shall be sealed or turned up to facilitate drainage around penetration. Ensure window and door openings are cut neatly and carefully and are properly fitted at flashing points. SILVERSARK® xR shall be cut back from any hot flue to avoid being a fire hazard. This can be achieved by a clear space of at least 50 mm, or as recommended by the manufacturer of the flue and approved by the local authority.

### DOUBLE BRICK AND MASONRY CAVITY WALLS

After the inner leaf of the double brick or masonry cavity wall is laid, place Ametalin Cavity Spacers™ onto the brick ties via the vertical slit provided, with the white adhesive side facing outwards. Install one cavity spacer per square metre to ensure the required air space. Remove adhesive tape backing. Install SILVERSARK® xR horizontally, cut slits through the pliable building membrane at all brick tie positions, and place SILVERSARK® xR into position over the brick ties. Push the membrane and the cavity spacer into position against the inner back leaf.

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