



# AIR-CELL Insulwhite®

## WHITE-FACED THERMO REFLECTIVE INSULATION



- Innovative cross-linked closed cell insulation core
- 3-in-1 Insulation, vapour barrier and radiant barrier
- Helps achieve a 6-star house energy rating
- White face for visible aesthetic finish
- Fibre-free, non-allergenic, non-irritant
- Quick and easy to install
- Strong, tough, durable
- Water-resistant and unaffected by moisture
- Rodent and insect resistant
- Flammability Index  $\leq 5$
- Compliant with AS/NZS 4859.1:2018
- CodeMark certified for NCC compliance
- Made in Australia



# Residential Metal Roof

## Typical Design Details

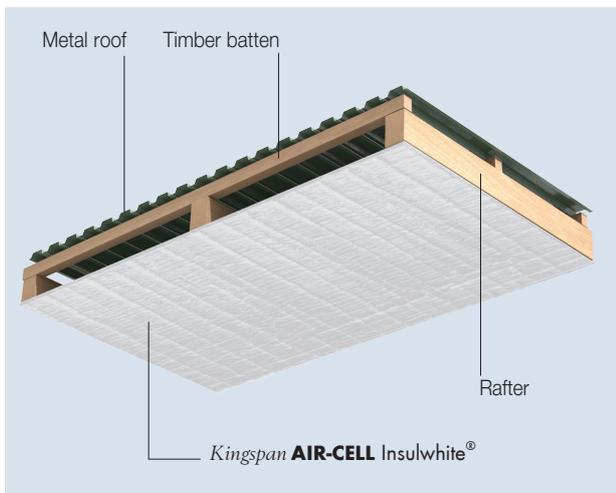


Figure 1 **Kingspan AIR-CELL Insulwhite®** in a pitched metal roof retrofit installation (attic conversion)

## Thermal Performance

NCC 2019 prescribes different methods to determine Total R-value Calculations for Volume 1 and Volume 2.

Residential Metal Roof	Heat flow in	Heat flow out
<b>Kingspan AIR-CELL Insulwhite®</b>	R <sub>T</sub> 1.9	R <sub>T</sub> 1.0

The R-values shown are Total R-values for the building element as required by the Energy Provisions of the NCC 2019 Vol 2, calculated in accordance with AS/NZS 4859.2:2018. **Kingspan AIR-CELL®** products are manufactured, tested and packaged in conformance with AS/NZS 4859.1:2018.

## Specification Guide

The roof insulation fixed to the underside of the rafters shall be **Kingspan AIR-CELL Insulwhite®** fibre-free, thermo reflective insulation, sandwiched by a highly reflective facing on the upper side and a white facing on the other side manufactured by Kingspan Insulation Pty Ltd, and shall be installed in accordance with the instructions issued by them.

A Project Specific Warranty provided by Kingspan Insulation must be submitted.

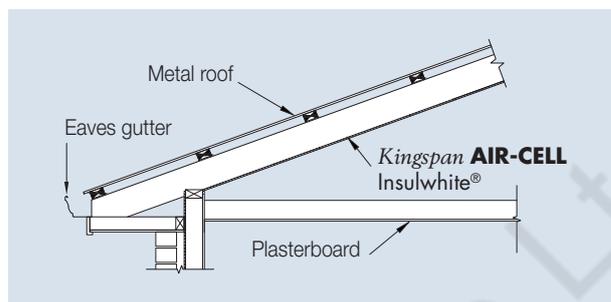


Figure 2 Side elevation of **Kingspan AIR-CELL Insulwhite®** in a pitched metal roof retrofit (attic conversion)

## Installation Instructions

1. Attach one end of the **Kingspan AIR-CELL Insulwhite®** to the underside of the first rafter to be covered.
2. Roll out **Kingspan AIR-CELL Insulwhite®** underneath the rafters with the white side facing inwards.
3. Fix to the underside of the rafter using 25 mm button head timber screws with a white painted head, and min. head diameter 12 mm.
4. Use 4 screws across the width of the roll at rafter, with one 25 mm from each edge and the other two at approx. 430 mm centres.
5. For neatest finish, butt join rolls and tape joins with white 72 mm wide tape. Alternatively, rolls can be overlapped by 50 mm and taped (please refer to brochure 'Kingspan Insulation Tape' for further information).
6. The above procedures can be used to install **Kingspan AIR-CELL Insulwhite®** to the inside face of framed walls in an attic conversion.
7. Neatly cut **Kingspan AIR-CELL Insulwhite®** around penetrations and any windows and doors, and tape to seal.
8. Leave at least 100 mm clearance around heat producing flues and light fittings.

# Residential Tiled Roof

## Typical Design Details

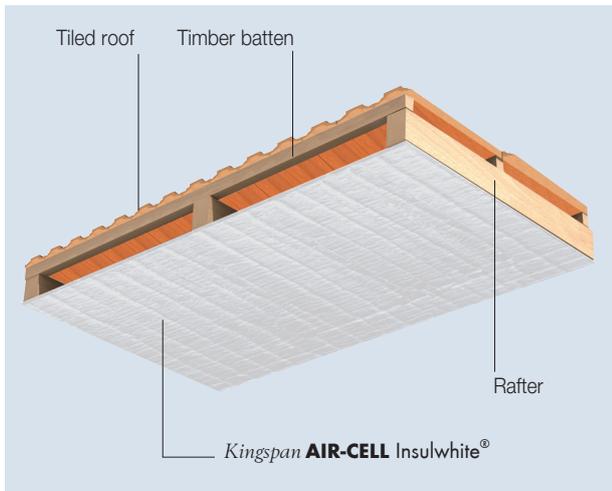


Figure 3 *Kingspan AIR-CELL Insulwhite®* in a pitched tiled roof retrofit installation (attic conversion)

## Thermal Performance

NCC 2019 prescribes different methods to determine Total R-value Calculations for Volume 1 and Volume 2.

Residential Tiled Roof	Heat flow in	Heat flow out
<i>Kingspan AIR-CELL Insulwhite®</i>	R <sub>T</sub> 2.0	R <sub>T</sub> 1.0

The R-values shown are Total R-values for the building element as required by the Energy Provisions of the NCC 2019 Vol 2, calculated in accordance with AS/NZS 4859.2 2018. *Kingspan AIR-CELL®* products are manufactured, tested and packaged in conformance with AS/NZS 4859.1:2018.

## Specification Guide

The roof insulation fixed to the underside of the rafters shall be *Kingspan AIR-CELL Insulwhite®* fibre-free, thermo reflective insulation, sandwiched by a highly reflective facing on the upper side and a white facing on the other side manufactured by Kingspan Insulation Pty Ltd, and shall be installed in accordance with the instructions issued by them.

A Project Specific Warranty provided by Kingspan Insulation must be submitted.

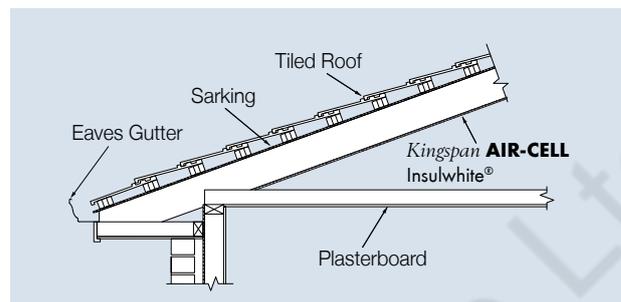


Figure 4 Side elevation of *Kingspan AIR-CELL Insulwhite®* in a pitched tiled roof retrofit (attic conversion)

## Installation Instructions

1. Attach one end of the *Kingspan AIR-CELL Insulwhite®* to the underside of the first rafter to be covered.
2. Roll out *Kingspan AIR-CELL Insulwhite®* underneath the rafters with the white side facing inwards.
3. Fix to the underside of the rafter using 25 mm button head timber screws with a white painted head, and min. head diameter 12 mm.
4. Use 4 screws across the width of the roll at rafter, with one 25 mm from each edge and the other two at approx. 430 mm centres.
5. For neatest finish, butt join rolls and tape joints with white 72 mm wide tape. Alternatively, rolls can be overlapped by 50 mm and taped (please refer to brochure 'Kingspan Insulation Tape' for further information).
6. The above procedures can be used to install *Kingspan AIR-CELL Insulwhite®* to the inside face of framed walls in an attic conversion
7. Neatly cut *Kingspan AIR-CELL Insulwhite®* around penetrations and any windows and doors, and tape to seal.
8. Leave at least 100 mm clearance around heat producing flues and light fittings.

# Product Details

## Product Description

Australian-made **Kingspan AIR-CELL Insulwhite®** is the next generation in reflective insulation, representing an evolutionary improvement from traditional bubble insulation. The innovative crossed-linked closed cell core of **Kingspan AIR-CELL Insulwhite®** has better thermal resistance than traditional bubble insulation of the same thickness and improved fire safety, complying with more stringent international fire standards.

**Kingspan AIR-CELL Insulwhite®** comprises a cross-linked, closed cell insulation core sandwiched by a highly reflective foil facing on the upper side and a white facing on the other side. **Kingspan AIR-CELL Insulwhite®** is designed to provide a protective, corrosive resistant thermal insulation for use where a white ceiling-like appearance is desired.

### Product Data

Product Thickness (nom.)	5.5 mm
Product R-value at 23°C	R0.15 m <sup>2</sup> .K/W
Roll Diameter (nom.)	450 mm
Roll Weight (nom.)	7.65 kg
Roll Size	1350 mm x 22.25 m (30 m <sup>2</sup> )
Reflectance (Reflective Face)	97%
Emittance (Reflective Face)	E0.03
Max. Span	2.4 m without support

## Management Standards

Standard	Management System
BS / I.S. EN ISO 9001:2008	Quality Management
AS/NZS ISO 14001:2004	Environmental Management

## Environmental Data

Aspect	Characteristic
Recyclability	Waste not recyclable Roll width to suit most applications to minimise on site waste
Re-usability	Re-usable if removed with care (long term of service expected)
Water Use	No water used in Kingspan Insulation's manufacturing process
Ozone Depleting Substances	None present in the finished product or in Kingspan Insulation's manufacturing process
Packaging	Contains approx 10% recycled product Packaging 100% recyclable
Embodied Energy	43 MJ/m <sup>2</sup> approximately



Figure 5 Cross-linked, white-faced **Kingspan AIR-CELL Insulwhite®**

## Product Specifications

Property	Test Method / Standard	Specification	Classification
Flammability Index	AS 1530.2	≤ 5	Low
Material R-value	ASTM C518 at 23°C	0.15 m <sup>2</sup> .K/W	-
IR Emittance	AS/NZS 4201.5	Reflective Face: 0.03 White Face: N/A	IR Reflective IR Non- Reflective
IR Emittance	-	-	Category RN
Burst Strength	AS 3706.4 (CBR)	1.0 kN	-
Vapour Control	ASTM E96	Vapour Barrier < 0.020 µg/N.s	Class 2
Water Control	AS/NZS 4201.4	Pass	Water Barrier
Moisture Shrinkage	AS/NZS 4201.3	< 0.5%	-
Dry Delamination	AS/NZS 4201.1	Pass	-
Wet Delamination	AS/NZS 4201.2	Pass	-
Surface Water Absorbency	AS/NZS 4201.6	< 100g/m <sup>2</sup>	Low
Corrosion Resistance	AS/NZS 4859.1:2018 App. E	Pass	-
Electrical Conductivity	AS/NZS 200.1:2017 - c.5.3.1.2	10MΩ	Electrically Conductive

# General Requirements

1. Fit *Kingspan AIR-CELL*<sup>®</sup> neatly around doors, windows, and any penetrations, and tape if necessary to prevent air leakage.
2. When taping a plastic squeegee or blade must be used to apply appropriate pressure to the tape. Surfaces must be dry and free from dust, oil or grease prior to taping (please refer to brochure 'Kingspan Insulation Tape' for further information).
3. Leave minimum 100 mm clearance around heat producing flues or light fittings (refer to light fitting manufacturer).

The instructions in this document are guidelines only and should be interpreted with consideration for the specific building design. The installation of *Kingspan AIR-CELL*<sup>®</sup> should be in conformance with the applicable clauses from AS 3999 and AS/NZS 4200.2 unless otherwise specified.

*Kingspan AIR-CELL*<sup>®</sup> can be damaged by intense heat above 105° C and contact with sparks and flame from blow torches, welders, cutting tools, etc. must be avoided.

The installer must make due provision for safety when installing *Kingspan AIR-CELL*<sup>®</sup> in any application.

## Safety Information

- Non-hazardous/non-toxic.
- No personal protective equipment required.
- UV protective sunglasses and screen should be used when installing in direct sunlight.
- Ensure at least 100 mm clearance from hot flues and light fittings (check for safe distance with lighting supplier).
- **Foil facings are conductive to electricity - avoid contact with un-insulated electrical cables and fittings.**

## Handling and Storage

*Kingspan AIR-CELL*<sup>®</sup> insulation products must be transported and stored in its protective packaging and kept clean and dry. Standing rolls on end reduces risk of damage should moisture be present in the packaging. Surfaces must be kept free of contaminants such as dust and grease, and must not be stored with foil surfaces in contact with alkaline materials i.e. wet cement, lime, etc.

# Contact Details

## General Enquiries

Tel: 1300 247 235

Email: [info@kingspaninsulation.com.au](mailto:info@kingspaninsulation.com.au)

*Kingspan Insulation Pty. Ltd. reserves the right to amend product specifications without prior notice. The information, technical details and fixing instructions etc. included in this literature are given in good faith and apply to uses described. Recommendations for use should be verified as to the suitability and compliance with actual requirements, specifications and any applicable laws and regulations. For other applications or conditions of use, Kingspan Insulation offers a Technical Advisory Service the advice of which should be sought for uses of Kingspan Insulation products that are not specifically described herein. Please check that your copy of the literature is current by contacting us or visiting [www.kingspaninsulation.com.au](http://www.kingspaninsulation.com.au)*



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