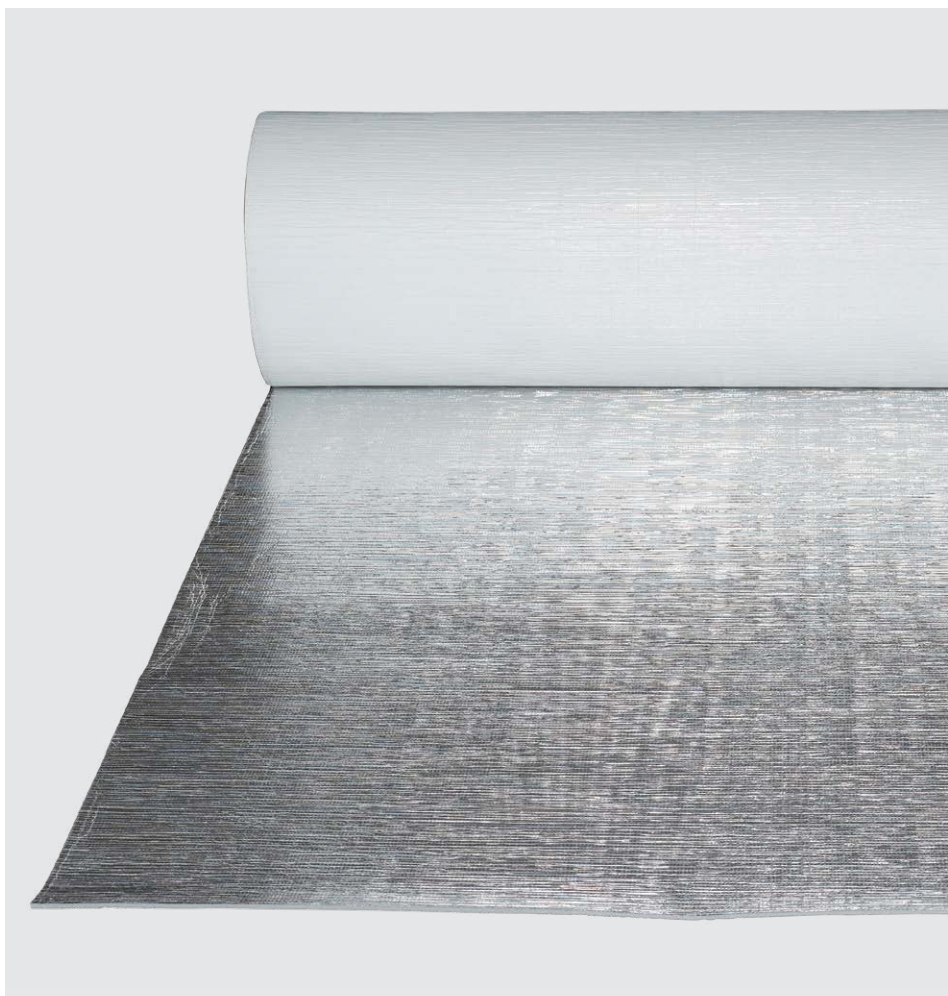


Insulation



# AIR-CELL<sup>®</sup> Insulwhite<sup>®</sup>

White-faced Thermo Reflective Insulation



- Cross-linked closed cell insulation core
- 3-in-1 Insulation, vapour barrier and radiant barrier
- Helps achieve the home energy efficiency provisions
- 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

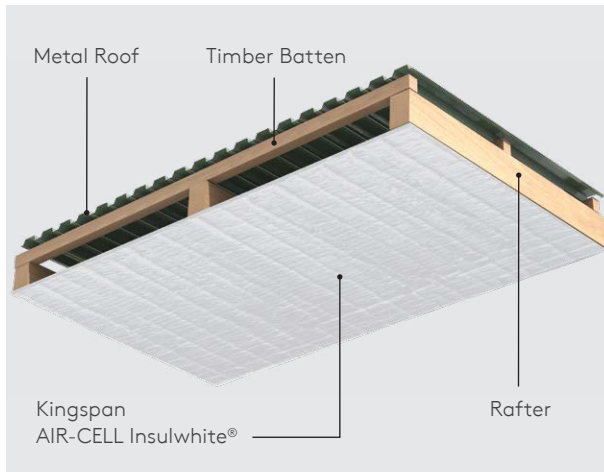


Figure 1. Kingspan AIR-CELL Insulwhite® in a pitched metal roof retrofit installation (attic conversion).

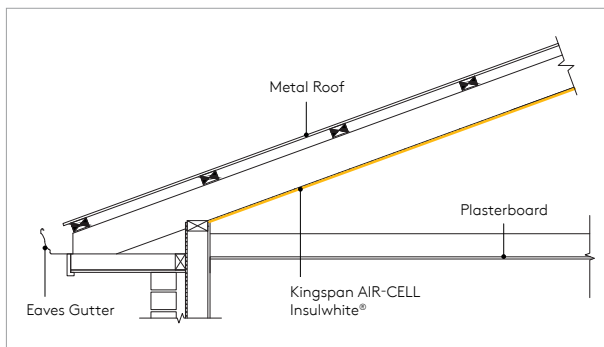


Figure 2. Side elevation of Kingspan AIR-CELL Insulwhite® in a pitched metal roof retrofit (attic conversion).

## Thermal Performance

Residential Metal Roof	Heat flow in	Heat flow out
Kingspan AIR-CELL Insulwhite®	$R_T 1.9$	$R_T 1.0$

The R-values shown are Total R-values for the building element as required by the Energy Provisions of the NCC, 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 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.

## 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

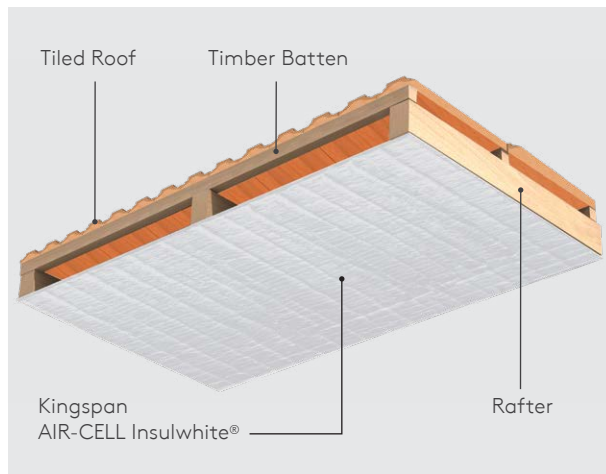


Figure 3. Kingspan AIR-CELL Insulwhite® in a pitched timber framed tiled roof retrofit installation (attic conversion).

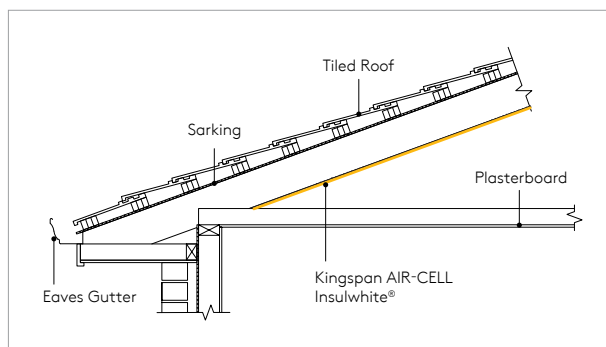


Figure 4. Side elevation of Kingspan AIR-CELL Insulwhite® in a pitched timber framed tiled roof retrofit installation (attic conversion).

## Thermal Performance

Residential Tiled Roof	Heat flow in	Heat flow out
Kingspan AIR-CELL Insulwhite®	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, 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 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.

## 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



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

Australian-made Kingspan AIR-CELL Insulwhite® is a reflective insulation, representing an improvement from traditional bubble insulation. The cross-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 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

AIR-CELL Insulwhite®	
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
Maximum Span Distance	2.4 m without support

## Management Standards

Standard	Management System
ISO 9001:2015	Quality Management
ISO 14001:2015	Environmental Management
ISO 45001:2018	Occupational Health & Safety Management

## Environmental Data

Aspect	Characteristic
Re-usability	Re-usable if removed with care (long term of service expected)
Water Use	No water used in Kingspan's manufacturing process

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# Product Details

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## Product Specifications

Property	Test Method / Standard	Specification	Classification
Flammability Index	AS 1530.2:1993	≤ 5	Low
Material R-value	ASTM C518-2017 at 23°C	R0.15 m <sup>2</sup> .K/W	-
IR Emittance	AS/NZS 4201.5:1994	Reflective Face: 0.03 White Face: N/A	IR Reflective IR Non-Reflective
IR Emittance	-	-	Category RN
Burst Strength	AS 3706.4:2012 (CBR)	1.0 kN	-
Vapour Control	ASTM E96 Part B:2016	Vapour Barrier < 0.020 µg/N.s	Class 2
Water Control	AS/NZS 4201.4:1994	Pass	Water Barrier
Moisture Shrinkage	AS/NZS 4201.3:1994	< 0.5%	-
Dry Delamination	AS/NZS 4201.1:1994	Pass	-
Wet Delamination	AS/NZS 4201.2:1994	Pass	-
Surface Water Absorbency	AS/NZS 4201.6:1994	< 100g/m <sup>2</sup>	Low
Corrosion Resistance	AS/NZS 4859.1:2018 App. E	Pass	-
Electrical Conductivity	AS/NZS 4200.1:2017 - c.5.3.1.2	Resistance ≤ 10 Ω	Electrically Conductive

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# Condensation

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As thermal performance requirements for the building fabric continue to rise, condensation is becoming an increasingly important design consideration for healthy buildings. Ineffective management of moisture and vapours can potentially lead to indoor health issues and structural defects which require expensive remedial works.

Interstitial condensation (condensation that occurs within the cavities of the building fabric) can go unnoticed for long periods of time and when persistent it promotes the growth of mould, rot in timber, and corrosion of metal framing and fixings. This interstitial condensation can be effectively mitigated by carefully selecting an appropriate building membrane with a suitable water vapour permeance, allowing moisture to harmlessly pass through the structure. Consideration of the condensation management provisions of the NCC, relevant to the Climate Zone should be undertaken, when selecting a sarking-type material.



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# Other Information

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## General Requirements

1. Fit Kingspan AIR-CELL 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 should be in conformance with the applicable clauses from AS 3999:2015 and AS/NZS 4200.2:2017 unless otherwise specified.

Kingspan AIR-CELL 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 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 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.

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# Contact Details

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## Australia

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