



AIR-CELL Permican[®]

VAPOUR-PERMEABLE INSULATION FOR WALLS WITH CAVITIES



- Helps achieve a 6-star house energy rating
- 3-in-1 insulation, vapour-permeable membrane and radiant barrier
- Reduces the risk of condensation
- Wall cavities remain unfilled and accessible for services
- 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 ≤ 5
- BCA and AS/NZS 4859.1 compliant



Low Energy –
Low Carbon Buildings

Product Details

Product Description

Kingspan AIR-CELL Permicanv[®] is an all-in-one insulation and vapour-permeable membrane designed specifically for walls with cavities to reduce the risk of condensation. Manufactured with a patented closed-cell structure sandwiched by highly reflective foil surfaces and pierced with tiny, evenly-spaced perforations, *Kingspan AIR-CELL Permicanv*[®] allows water vapour permeance while helping to achieve a 6-star house energy rating.

Product Data	
Product Thickness	5.5 mm
Product R-Value	R0.15
Roll Diameter	420 mm
Roll Weight	7.7 kg
Roll Size	1350 mm x 22.25 m (30 m ²)
Reflectance	Reflective Face 97% Anti-Glare Face 95%
Emittance	Reflective Face E0.03 Anti-Glare Face E0.05



Figure 1 Vapour-permeable perforations in *Kingspan AIR-CELL Permicanv*[®]

Condensation

As thermal performance requirements for the building fabric continue to rise, condensation is becoming an increasingly important design consideration for healthy buildings. *Kingspan AIR-CELL Permicanv*[®] reduces the risk of interstitial condensation by allowing vapour to permeate through tiny perforations.

The calculation (Figure 2) shows that the temperature profile of the system, represented by the solid line (T), does not drop below dewpoint temperature, represented by the dotted line (D), indicating that condensation will not occur in this system in this particular location.

Management Standards

Standard	Management System
ISO 9001:2008	Quality Management

Product Testing

Characteristic	Test Method	Result
Flammability	AS 1530.2	Low (Index ≤ 5)
Thermal Resistance	ASTM C518	R0.15
Emittance	ASTM E408	Reflective: E0.03 Anti-Glare: E0.05
Vapour Transmission	ASTM E96	Medium
Dry Delamination	AS/NZS 4201.1	Pass
Wet Delamination	AS/NZS 4201.2	Pass
Shrinkage	AS/NZS 4201.3	< 0.5%
Water Penetration	AS/NZS 4201.4	High Resistance
Water Absorbency	AS/NZS 4201.6	Unclassified
Duty	AS 4200.1 6.1.4	Extra Heavy

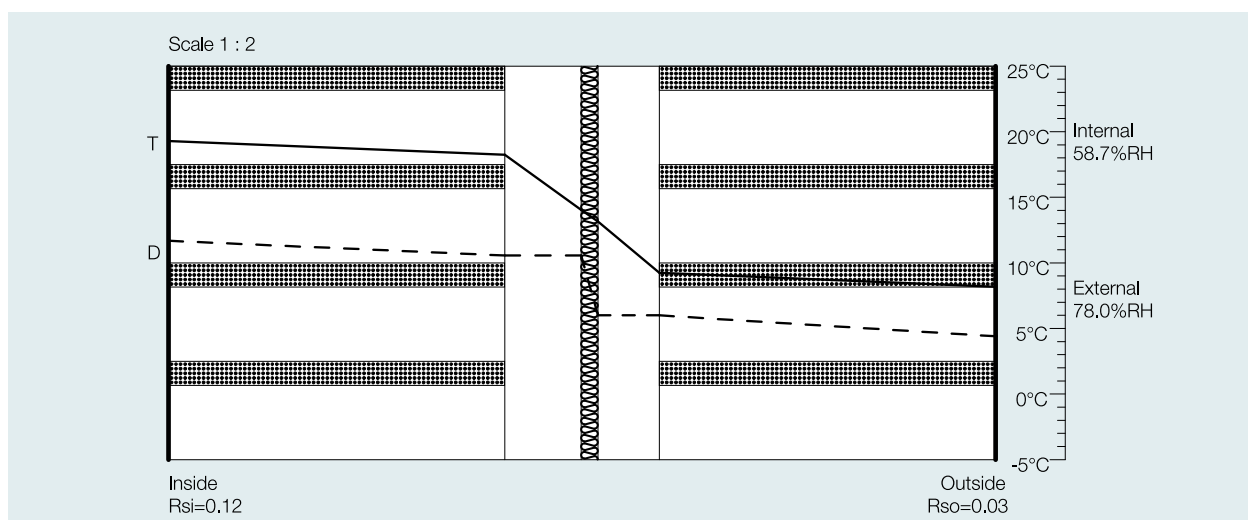


Figure 2 Sample condensation assessment for *Kingspan AIR-CELL Permicanv*[®] in a double brick cavity wall in Perth, WA (BCA Climate Zone 5) performed in accordance with ISO 13788:2001 (Corrigendum 1).

Double Brick Cavity Walls

Typical Design Detail

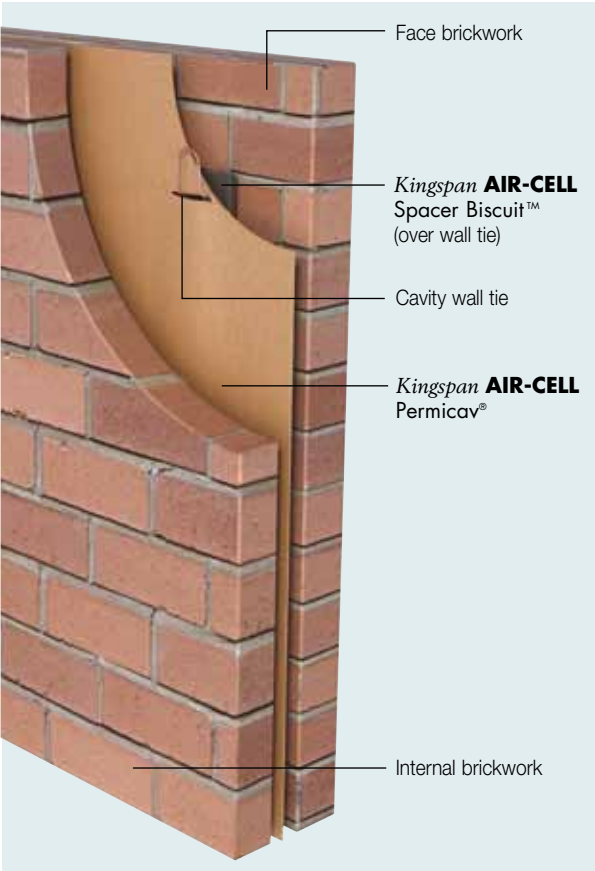


Figure 3 Double brick cavity wall installation

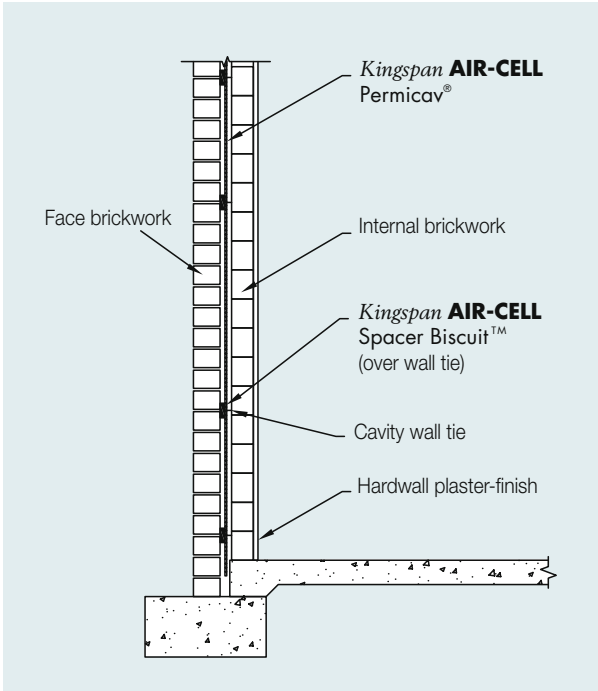


Figure 4 Side elevation of Kingspan AIR-CELL Permicav® in double brick cavity wall

Installation Instructions

For detailed Installation Instructions please refer to the brochure "Double Brick Cavity Walls".

Thermal Performance

Application	Heat flow in	Heat flow out
Double brick cavity wall	R _T 2.0	R _T 2.1

The R-values shown are Total R-values for the building element as required by the Energy Provisions of the Building Code of Australia. Kingspan AIR-CELL® products are manufactured, tested and packaged in conformance with AS/NZS 4859.1:2002 - Amdt 1. The contribution of the product Total R-values depends on installation and environmental conditions. The R-value will be reduced in the event of the accumulation of dust on the upward facing surfaces and in those cavities that are ventilated.

Specification Guide

The wall insulation fixed to the brickwork over the wall ties shall be Kingspan AIR-CELL Permicav® fibre-free, thermo reflective insulation, comprising a cross-linked, closed-cell foam core sandwiched with an anti-glare foil facing on one side and a plain foil facing on the other side manufactured by Kingspan Insulation, and shall be installed in accordance with the instructions issued by them.

Brick Veneer Walls

Typical Design Detail

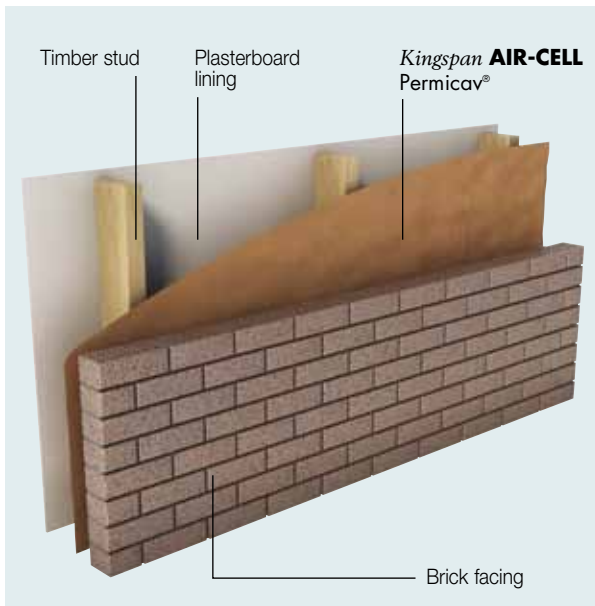


Figure 5 Brick veneer wall installation

Thermal Performance

Application	Heat flow in	Heat flow out
Brick veneer wall	$R_T 1.9$	$R_T 2.1$

The R-values shown are Total R-values for the building element as required by the Energy Provisions of the Building Code of Australia. Kingspan AIR-CELL® products are manufactured, tested and packaged in conformance with AS/NZS 4859.1:2002 - Arndt 1. The contribution of the product Total R-values depends on installation and environmental conditions. The R-value will be reduced in the event of the accumulation of dust on the upward facing surfaces and in those cavities that are ventilated.

Specification Guide

The wall insulation fixed to the outside of the stud frame shall be **Kingspan AIR-CELL Permican®** fibre-free, thermo reflective insulation, comprising a cross-linked, closed-cell foam core sandwiched with an anti-glare foil facing on one side and a plain foil facing on the other side manufactured by Kingspan Insulation, and shall be installed in accordance with the instructions issued by them.

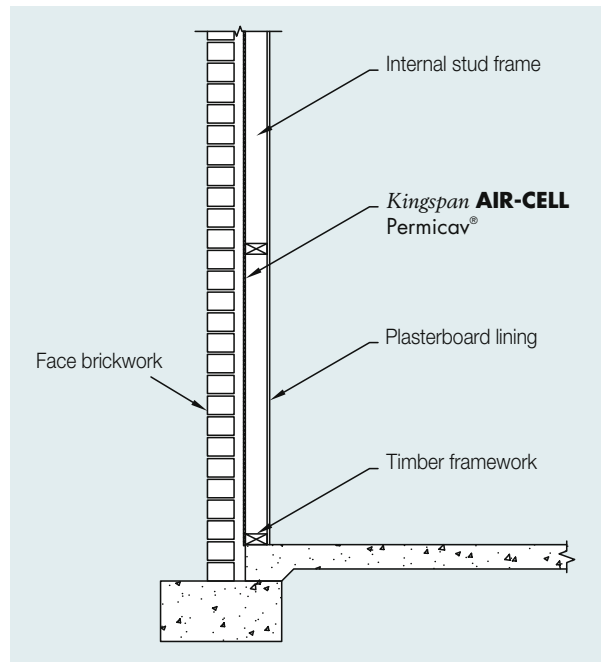


Figure 6 Side elevation of **Kingspan AIR-CELL Permican®** in brick veneer wall

Installation Instructions

For detailed Installation Instructions please refer to the brochure "Brick Veneer Walls".

Concrete Walls & Block Walls

Typical Design Detail

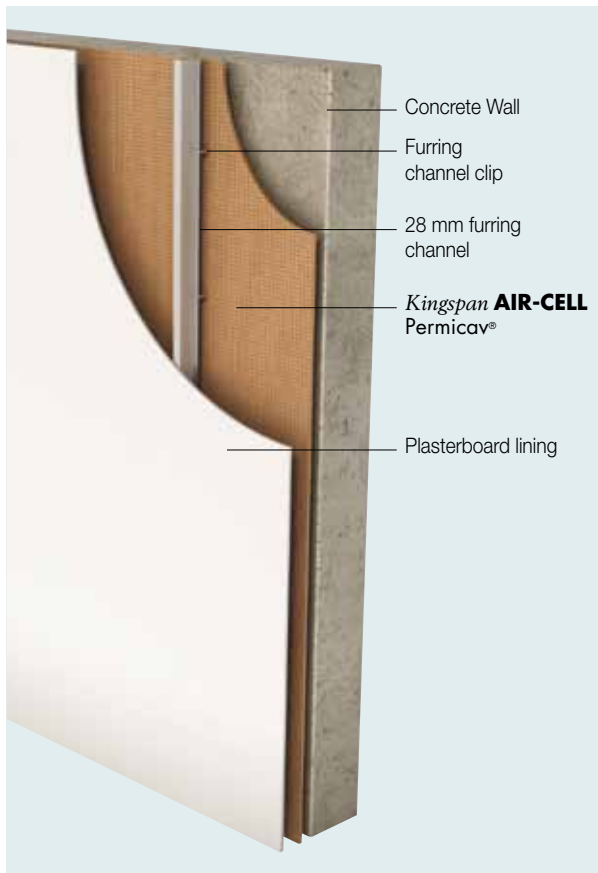


Figure 7 **Kingspan AIR-CELL Permican®** clip-and-channel system

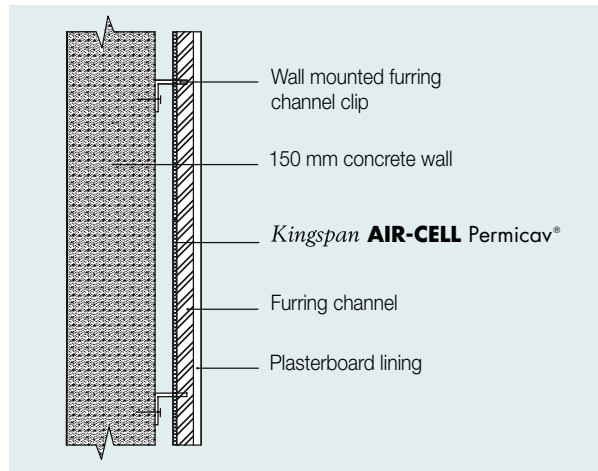


Figure 8 Side elevation of **Kingspan AIR-CELL Permican®** clip-and-channel system

Thermal Performance

Wall Construction	Heat flow in	Heat flow out
Precast concrete wall (150 mm)	R_T 1.8	R_T 2.0
Block wall (140 mm)	R_T 1.8	R_T 2.0

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Specification Guide

The wall insulation fixed to the internal side of the wall over the furring channel clips shall be breathable **Kingspan AIR-CELL Permican®** fibre-free, thermo reflective insulation, comprising a cross-linked, closed-cell foam core sandwiched with an anti-glare foil facing on one side and a plain foil facing on the other side manufactured by Kingspan Insulation, and shall be installed in accordance with the instructions issued by them.

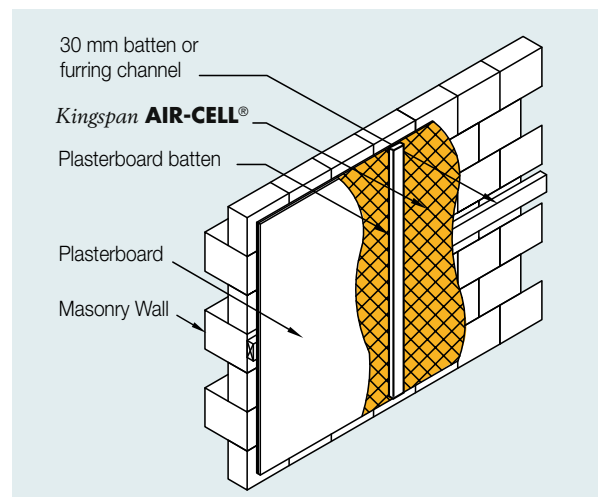


Figure 9 **Kingspan AIR-CELL®** counter-batten system

Installation Instructions

For detailed Installation Instructions please refer to the brochure "Concrete Walls & Block Walls".

Contact Details

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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



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