



# AIR-CELL Permishield®

## VAPOUR-PERMEABLE INSULATION MEMBRANE



- 3-in-1 Insulation, thermal break and vapour-permeable sarking
- Helps achieve a 6-star house energy rating
- Fibre-free, non-allergenic, non-irritant
- Quick and easy to install
- Strong, tough, durable
- Water-resistant and unaffected by moisture
- Anti-bacterial and anti-fungal
- Rodent and insect resistant
- Compliant with AS/NZS 4859.1
- CodeMark-certified for BCA compliance

  
WINNER HIA WA  
PRODUCT INNOVATION AWARD



*Low Energy –  
Low Carbon Buildings*

# Reverse Brick Veneer Wall

## Typical Design Details

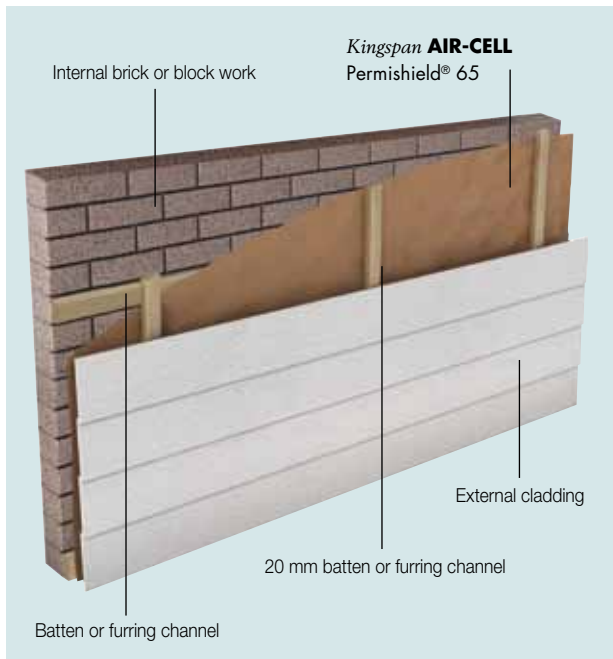


Figure 1 **Kingspan AIR-CELL Permishield® 65** in reverse brick veneer wall installation

## Thermal Performance

Reverse brick veneer wall	Heat flow in	Heat flow out
<b>Kingspan AIR-CELL Permishield® 65</b>	$R_T$ 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. The contribution of the product Total R-values depends on installation and environmental conditions.

## Specification Guide

The wall insulation fixed to the batten shall be vapour-permeable, CodeMark-certified **Kingspan AIR-CELL Permishield® 65** 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.

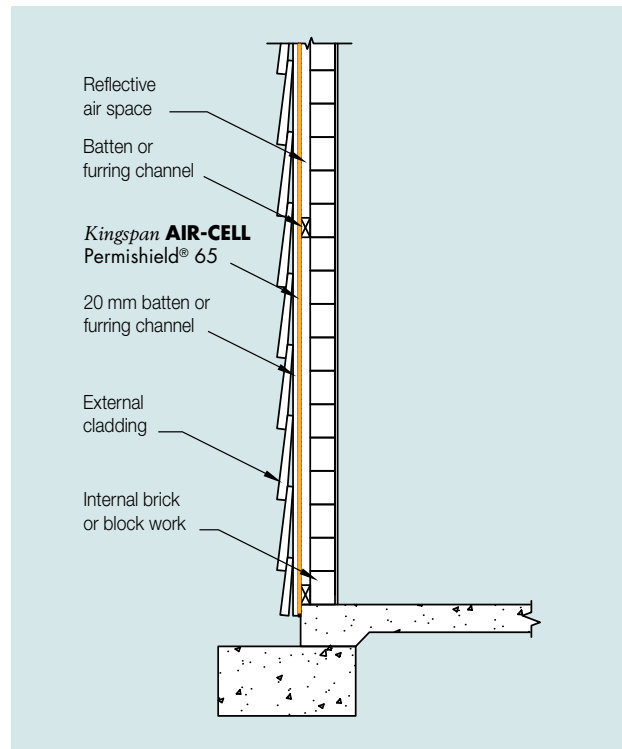


Figure 2 Side elevation of **Kingspan AIR-CELL Permishield® 65** in a reverse brick veneer wall

## Installation Instructions

1. Roll out **Kingspan AIR-CELL Permishield® 65** horizontally and fix to batten.
2. Cut **Kingspan AIR-CELL Permishield® 65** carefully around doors, windows and other openings, so that it neatly abuts to frames.
3. Butt join **Kingspan AIR-CELL Permishield® 65** sheets and tape with a 48 mm wide reinforced foil tape (please refer to brochure "Kingspan Insulation Tape" for further information).
4. Fix counter battens and exterior cladding.

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

# Steel-framed Wall

## Typical Design Detail

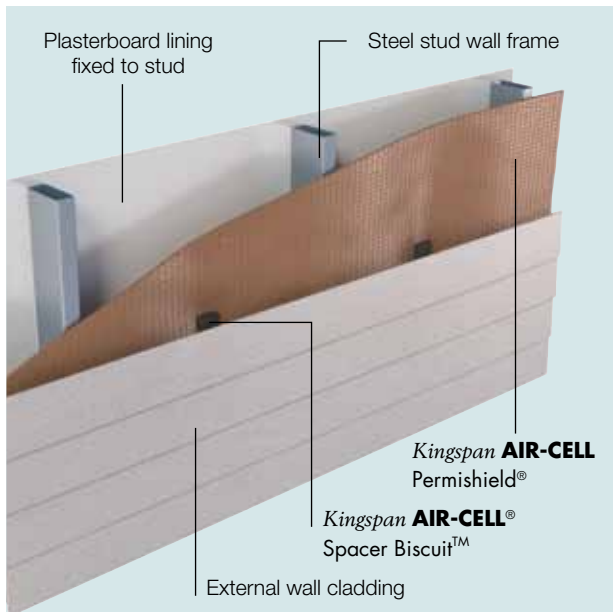


Figure 3 **Kingspan AIR-CELL Permishield®** on steel-framed wall

## Thermal Performance

Product	Heat flow in	Heat flow out
<b>Kingspan AIR-CELL Permishield® 65</b>	R <sub>T</sub> 1.6	R <sub>T</sub> 1.8
<b>Kingspan AIR-CELL Permishield® 80</b>	R <sub>T</sub> 1.7	R <sub>T</sub> 1.9

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. The contribution of the product Total R-values depends on installation and environmental conditions.

## Specification Guide

The wall insulation fixed to the outside of the stud frame shall be vapour-permeable, CodeMark-certified **Kingspan AIR-CELL Permishield®** \_\_\_\_\_ (specify 65 or 80) 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.

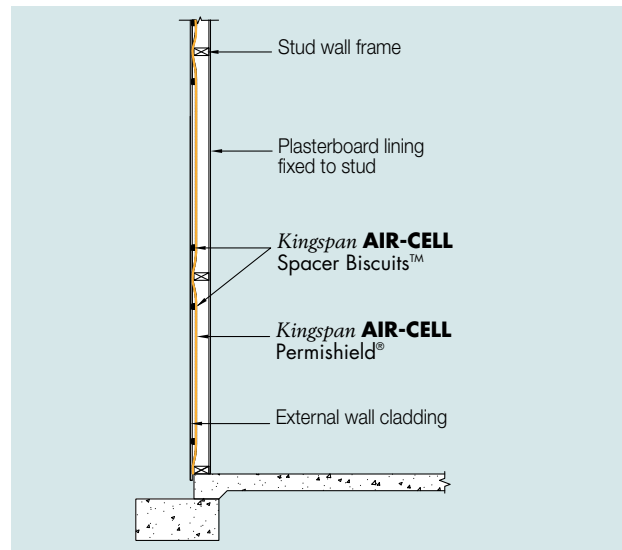


Figure 4 Side elevation of **Kingspan AIR-CELL Permishield®** on steel-framed wall

## Installation Instructions

1. Fix **Kingspan AIR-CELL Permishield®** loosely to the outside of frame leaving flexibility for the insulation to be dished onto the wall cavity.
2. Cut **Kingspan AIR-CELL Permishield®** carefully around doors, windows and other openings, so that it neatly abuts to frames.
3. Butt join **Kingspan AIR-CELL Permishield®** sheets and tape with a 48 mm wide reinforced foil tape (please refer to brochure "Kingspan Insulation Tape" for further information).
4. Provide for outer air space by adhering the **Kingspan AIR-CELL Spacer Biscuits™** to the outer face of the **Kingspan AIR-CELL Permishield®** (approximately three Biscuits™ per square metre required).
5. Commence installing cladding in accordance with manufacturer's installation instructions.

For detailed Installation Instructions please refer to the brochure "Steel-framed Walls".



Scan to see the installation video

# Timber-framed Wall

## Typical Design Detail

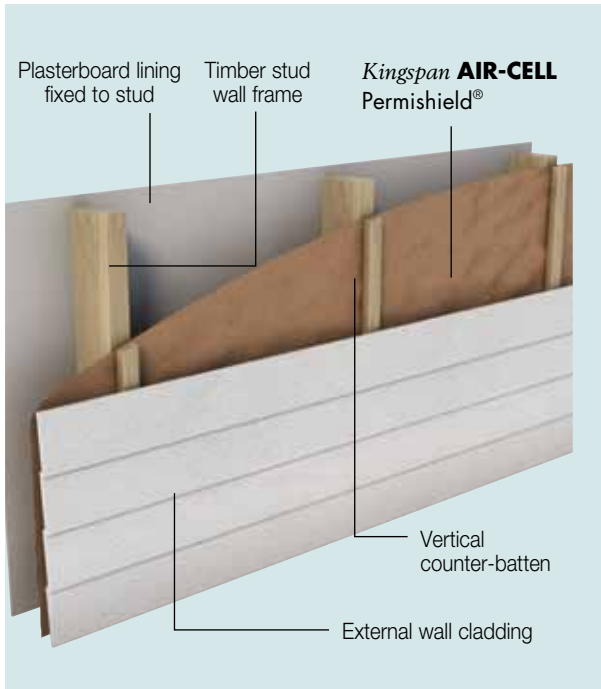


Figure 5 **Kingspan AIR-CELL Permishield®** in a timber-framed wall installation using counter-battens

## Thermal Performance

Product	Heat flow in	Heat flow out
<b>Kingspan AIR-CELL Permishield® 65</b>	R <sub>T</sub> 1.6	R <sub>T</sub> 1.8
<b>Kingspan AIR-CELL Permishield® 80</b>	R <sub>T</sub> 1.7	R <sub>T</sub> 1.9

*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. The contribution of the product Total R-values depends on installation and environmental conditions.*

## Specification Guide

The wall insulation fixed to the outside of the stud frame shall be vapour-permeable, CodeMark-certified **Kingspan AIR-CELL Permishield®** \_\_\_\_\_ (specify 65 or 80) 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.

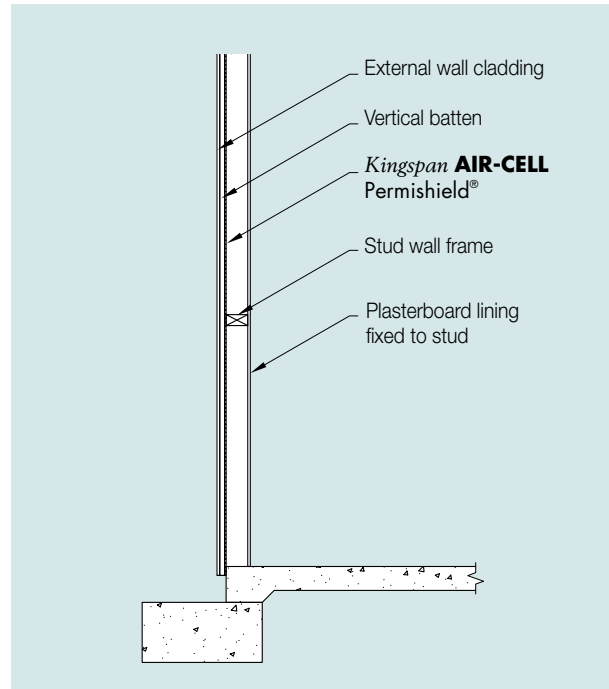


Figure 6 Side elevation of **Kingspan AIR-CELL Permishield®** on timber-framed wall

## Installation Instructions

1. Roll out **Kingspan AIR-CELL Permishield®** horizontally and fix to outside of frame.
2. Cut **Kingspan AIR-CELL Permishield®** carefully around doors, windows and other openings, so that it neatly abuts to frames.
3. Butt join insulation sheets and tape with a 48 mm wide reinforced foil tape (please refer to brochure "Kingspan Insulation Tape" for further information).
4. Fix counter battens and exterior cladding.

For detailed Installation Instructions please refer to the brochure "Timber-framed Walls".



Scan to see the installation video

# Product Details

## Product Description

*Kingspan AIR-CELL Permishield*® (Patent No. 2012100976) is a revolutionary vapour-permeable barrier and insulation wrapped up in a single product. *Kingspan AIR-CELL Permishield*® is designed specifically for steel-framed wall applications for use behind lightweight cladding materials that require vapour permeance. Manufactured with a patented closed-cell structure sandwiched by highly reflective foil surfaces and pierced with tiny, evenly-spaced breather holes, *Kingspan AIR-CELL Permishield*® allows building professionals to do away with the traditional sarking-plus-batts combination in order to achieve thermal compliance as well as satisfy vapour permeance.

Product Data	<i>Kingspan AIR-CELL Permishield</i> ® 65	<i>Kingspan AIR-CELL Permishield</i> ® 80
Product Thickness	6.5 mm	8 mm
Thermal Break	R0.2	R0.25
Roll Diameter	450 mm	500 mm
Roll Weight	9.15 kg	10 kg
Roll Size	1350 mm x 22.25 m (30 m <sup>2</sup> )	
<b>Reflectance</b>		
Anti-Glare Face	95%	
Reflective Face	97%	
<b>Emittance</b>		
Anti-Glare Face	E0.05	
Reflective Face	E0.03	

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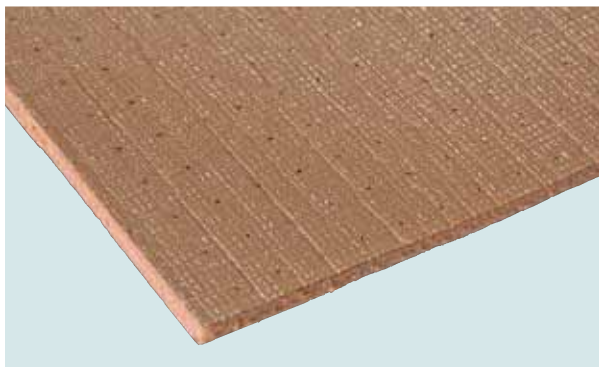


Figure 7 Vapour-permeable perforations in *Kingspan AIR-CELL Permishield*®

## Management Standards

Standard	Management System
BS / I.S. EN ISO 9001:2008	Quality Management

## Product Testing

Characteristic	Test Method	Result
Corrosion Resistance	AS/NZS 4859.1 Appendix I	Pass
Flammability	AS 1530.2	Low (Index $\leq$ 5)
Ignitability Flame Spread Heat Release Smoke Release	AS 1530.3	0/0/0/0-1
Cone Calorimeter	AS/NZS 3837	Group 1
Thermal Resistance	ASTMC518	R0.2 (6.5 mm) R0.25 (8 mm)
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	$\leq$ 0.5%
Water Penetration	AS/NZS 4201.4	High Resistance
Water Absorbency	AS/NZS 4201.6	Unclassified
Duty	AS 4200.1	Extra Heavy

## Environmental Data

Aspect	Characteristic
Recycled Content	Approx 3%
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
Processing Greenhouse Gas Emissions	No Greenhouse Gas Emissions 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
Transport	Distribution policy incorporating the principals of ISO 14001
Embodied Energy	43 MJ/m <sup>2</sup> approximately

# Contact Details

## General Enquiries

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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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