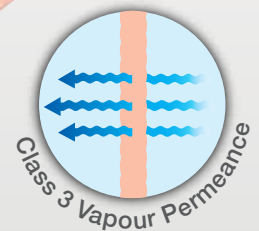




AIR-CELL Permican XV™

VAPOUR-PERMEABLE INSULATION FOR WALLS WITH CAVITIES



- Reduces the risk of condensation
- Helps achieve a 6-star house energy rating
- 3-in-1 insulation, vapour-permeable membrane and radiant barrier
- Wall cavities remain unfilled and accessible for services
- Fibre-free, non-allergenic, non-irritant
- Quick and easy to install
- Water-resistant and unaffected by moisture
- Strong, tough, durable
- Rodent and insect resistant
- Flammability Index ≤ 5
- NCC and AS/NZS 4859.1:2018 compliant
- Made in Australia



Low Energy –
Low Carbon Buildings

Residential Double Brick Cavity Walls

Typical Design Detail

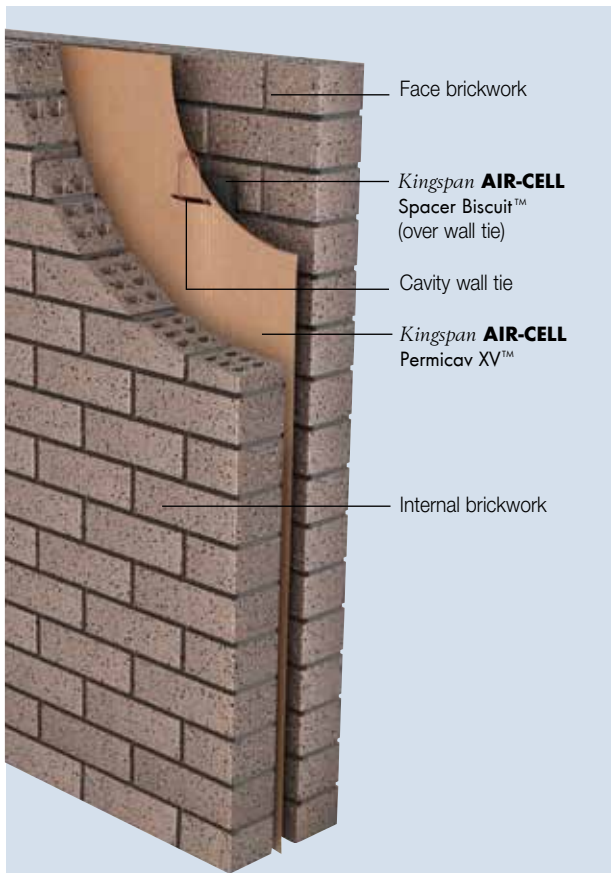


Figure 1 Double brick cavity wall installation

Thermal Performance

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

Application	Heat flow in	Heat flow out
Double brick cavity wall	R _T 1.9	R _T 1.8

The R-values shown are Total R-values for the building element as required by the Energy Provisions of the NCC Volume 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 wall insulation fixed to the brickwork over the wall ties shall be **Kingspan AIR-CELL Permicanv XV™** 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 Pty Ltd, and shall be installed in accordance with the instructions issued by them.

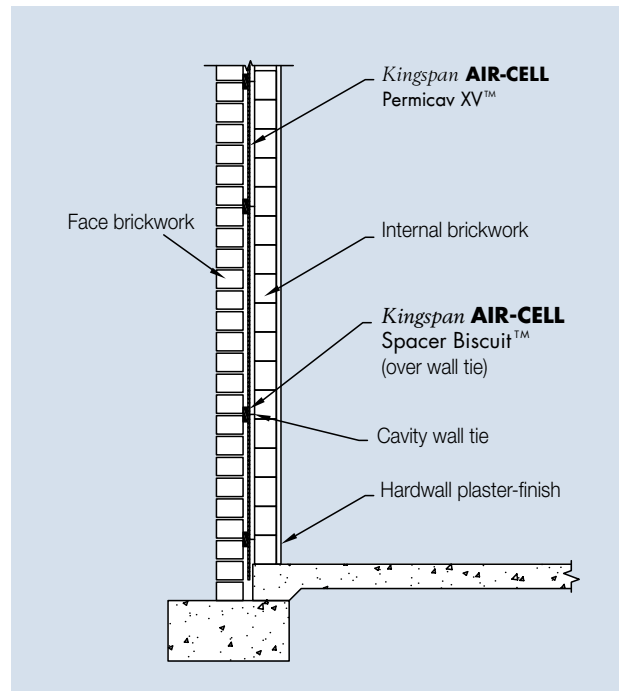


Figure 2 Side elevation of **Kingspan AIR-CELL Permicanv XV™** in double brick cavity wall

Installation Instructions

1. Lay outer leaf or brickwork with wall ties in place.
2. Clip **Kingspan AIR-CELL Spacer Biscuits™** onto every second wall tie, or as required to maintain a nominal 20 mm air space between the brick face and **Kingspan AIR-CELL Permicanv XV™** and push against the brickwork.
3. Roll out **Kingspan AIR-CELL Permicanv XV™** horizontally (anti-glare facing installer) and offer up to the wall.
4. Cut a slit for each wall tie to penetrate the **Kingspan AIR-CELL Permicanv XV™**.
5. Push **Kingspan AIR-CELL Permicanv XV™** over the wall ties until it is against the **Kingspan AIR-CELL Spacer Biscuits™**.
6. Allow a 50 mm overlap at joints with the upper layer overlapping on the outside of the lower, and tape with a 48 mm wide reinforced foil tape (please refer to brochure "Kingspan Insulation Tape" for further information).



Scan to see the installation video

Residential Brick Veneer Walls

Typical Design Detail

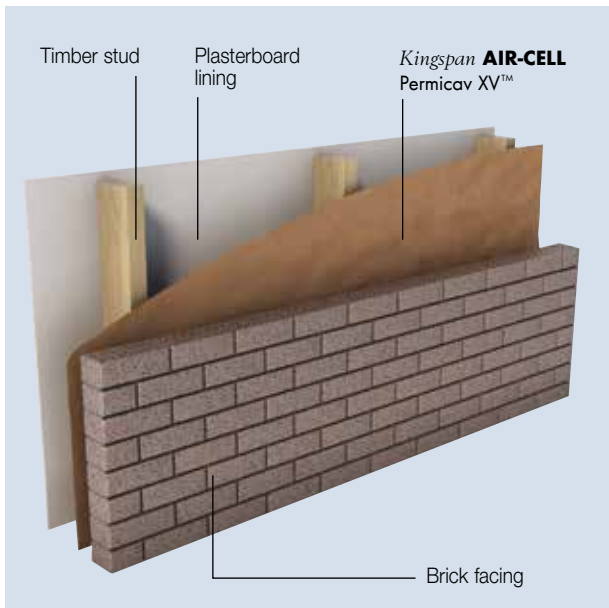


Figure 3 Brick veneer wall installation

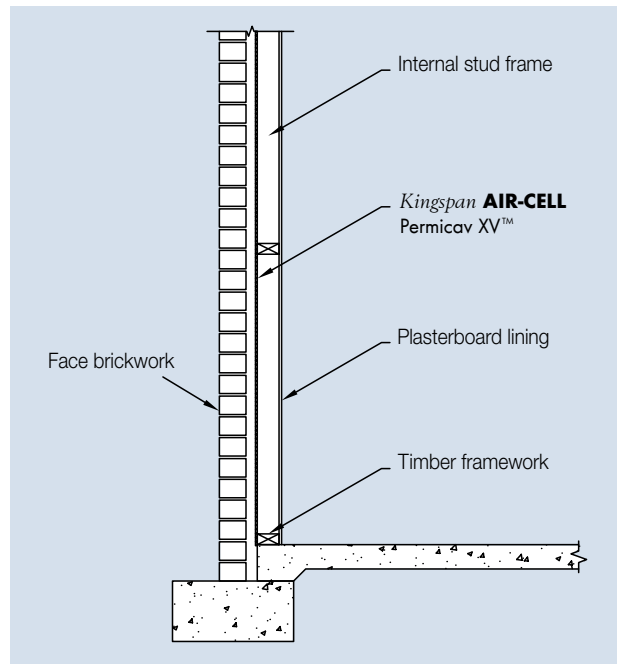


Figure 4 Side elevation of **Kingspan AIR-CELL Permican XV™** in brick veneer wall

Thermal Performance

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

Application	Heat flow in	Heat flow out
Brick veneer wall	$R_T 1.8$	$R_T 1.8$

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

Specification Guide

The wall insulation fixed to the outside of the stud frame shall be **Kingspan AIR-CELL Permican XV™** 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 Pty Ltd, and shall be installed in accordance with the instructions issued by them.

Installation Instructions

1. Roll out **Kingspan AIR-CELL Permican XV™** horizontally and fix to outside of internal wall frame, working from the bottom up.
2. Allow 50 mm overlap between top and bottom layers and tape with 48 mm reinforced foil tape (please refer to brochure "Kingspan Insulation Tape" for further information).
3. Cut **Kingspan AIR-CELL Permican XV™** carefully around doors, windows and other openings, so that it neatly abuts to frames.
4. Penetrations for wall ties or services should be neatly cut to minimize gaps.



Scan to see the installation video

Product Details

Product Description

Australian-made *Kingspan AIR-CELL Permican XV™* (Patent application nos. 2015245930 (AUS) and 724525 (NZ)) is the next generation of vapour-permeable insulation. This evolution is specifically designed to reduce the risk of condensation in walls with cavities. The micro perforations allow water vapour to permeate through while keeping moisture out and maintaining thermal resistance.

Kingspan AIR-CELL Permican XV™ is manufactured with a patented perforated closed-cell core sandwiched by highly reflective foil facings.

Product Data

Product Thickness (nom.)	5.5 mm
Product R-Value	Product R-value at 23°C, R0.15 m².K/W
Roll Diameter (nom.)	420 mm
Roll Weight (nom.)	7.7 kg
Roll Size	1350 mm x 22.25 m (30 m²)
Reflectance	Reflective Face 97% Anti-Glare Face 88%
Emittance	Reflective Face E0.03 Anti-Glare Face E0.12
Max. Span	2.4 m

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/m² approximately

Product Specifications

Characteristic	Test Method /Standard	Specification	Classification
Flammability Index	AS 1530.2	≤5	Low
Material R-value	ASTM C518 at 23°C	0.15 m².K/W	-
IR Emittance	AS/NZS 4201.5	Reflective face: 0.03 Anti-Glare Face: 0.12	IR Reflective IR Semi Reflective
IR Emittance	-	-	Category RS
Burst Strength	AS 3706.4 (CBR)	0.9 kN	-
Vapour Control	ASTM E96	Vapour Permeable 0.300 µg/N.s	Class 3
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/m2	High
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

Condensation

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.

Our Technical Services team can also offer customised condensation risk advice for your projects, so you always get the right advice for the right application.

N.B. Appropriate products should always be used for the appropriate climates, constructions and conditions. Depending on some variables, a vapour barrier may be preferable. Please contact us or consult your architect for more detailed advice.



Figure 5 Vapour-permeable perforations in Kingspan **AIR-CELL Permican XV™**

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 and AS/NZS 4200.2 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.



Contact Details

General Enquiries

Tel: 1300 247 235

Email: 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



Kingspan Insulation Pty Ltd

Tel: 1300 247 235

Email: info@kingspaninsulation.com.au

www.kingspaninsulation.com.au