



AIR-CELL Permiwall®

VAPOUR-PERMEABLE INSULATION FOR
CONCRETE WALLS



- 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



Concrete Walls & Block Walls

Typical Design Detail

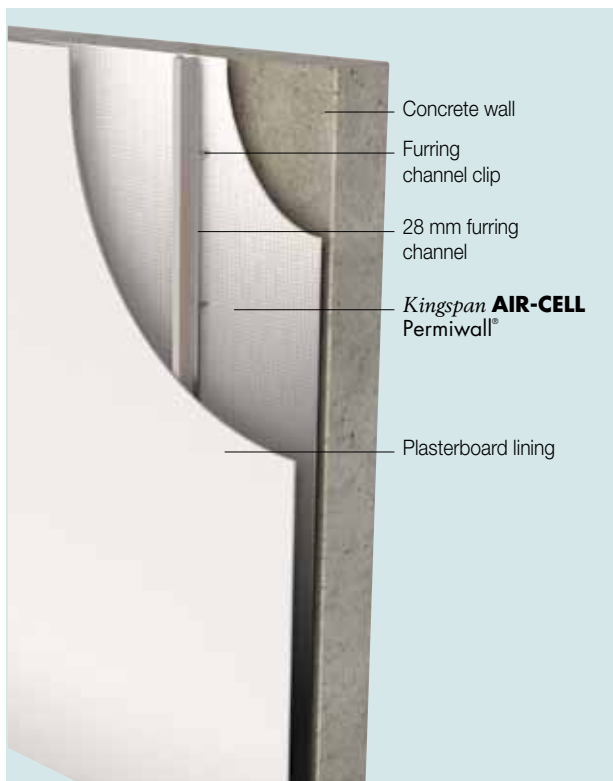


Figure 1 **Kingspan AIR-CELL Permiwall** clip-and-channel system

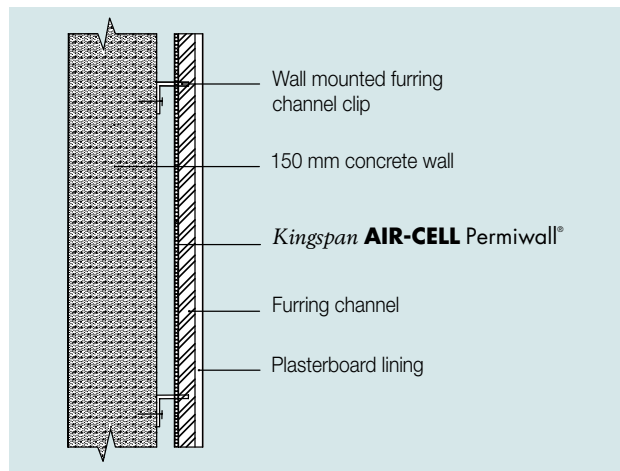


Figure 2 Side elevation of **Kingspan AIR-CELL Permiwall** clip-and-channel system

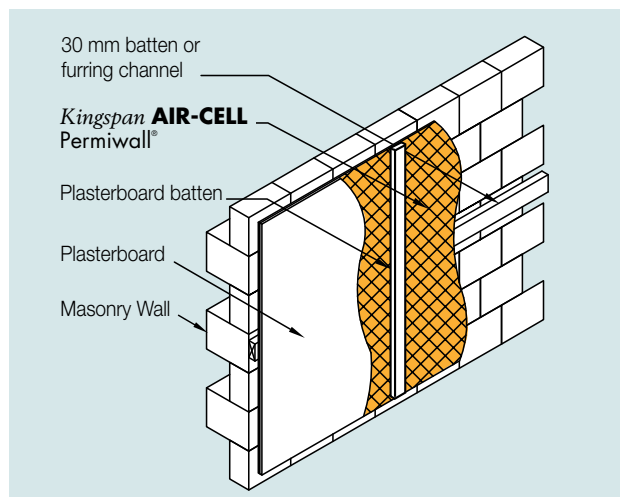


Figure 3 **Kingspan AIR-CELL Permiwall** counter-batten system

Thermal Performance

Wall Construction	Heat flow in	Heat flow out
Concrete wall (150 mm)	R _T 1.8	R _T 2.0
Block wall (140 mm)	R _T 1.8	R _T 2.0

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 internal side of the wall over the furring channel clips shall be **Kingspan AIR-CELL Permiwall** fibre-free, thermo reflective insulation, comprising a cross-linked, closed-cell foam core sandwiched with a plain foil facing on both sides manufactured by Kingspan Insulation Pty Ltd, and shall be installed in accordance with the instructions issued by them.



Scan to see the installation video

Installation Instructions

Clip-and-Channel System

1. Install chosen furring channel clips at required spacing for plasterboard lining.
2. Fit **Kingspan AIR-CELL Permiwall** over channels and hold in position with tape or screws, or cut slots for the **Kingspan AIR-CELL Permiwall** to fit over the wings of the channel clips.
3. Butt join rolls of **Kingspan AIR-CELL Permiwall** and tape with 72 mm wide reinforced aluminium tape (please refer to brochure "Kingspan Insulation Tape" for further information).
4. Install furring channel by clipping into channel clips.
5. Install plasterboard lining.

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

Product Details

Product Description

Kingspan AIR-CELL Permiwall® (Patent No. 2012100976) is an all-in-one insulation and vapour-permeable membrane designed specifically for concrete walls to reduce the risk of condensation. Manufactured with a patented closed-cell structure sandwiched by highly reflective foil facings and pierced with tiny, evenly-spaced perforations, *Kingspan AIR-CELL Permiwall*® allows water vapour permeance while helping to achieve a 6-star house energy rating.

Product Data	
Product Code	PS055F
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	97%
Emittance	E0.03
Max. Span	2.4 m



Figure 4 Vapour-permeable perforations in *Kingspan AIR-CELL Permiwall*®

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 Permiwall*® reduces the risk of interstitial condensation by allowing vapour to permeate through tiny perforations.

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.

Management Standards

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

Product Specifications

Characteristic	Test Method / Standard	Specification
Flammability Index	AS 1530.2	≤5
Material Thermal Resistance	ASTM C518	0.15 m ² -K/W
Emittance	ASTM E408	E0.03
Duty Rating (Burst Force)	AS 3706.4	0.9 kN - equivalent to Extra Heavy Duty
Vapour Barrier	ASTM E96	Medium Resistance
Shrinkage	AS/NZS 4201.3	< 0.5%
Dry Delamination	AS/NZS 4201.1	Pass
Wet Delamination	AS/NZS 4201.2	Pass
Water Barrier	AS/NZS 4201.4	High Resistance
Water Absorbency	AS/NZS 4201.6	Unclassified
Corrosion Resistance	AS/NZS 4859.1 Appendix I	Pass

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 50 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 50 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.

Welcome to Kingspan Insulation

Kingspan Insulation is a market leading manufacturer of innovative ultra-thin flexible insulation products and super high performance rigid insulation products for building fabric and building services applications. Kingspan Insulation is committed to providing the world market with high quality, innovative products supported by technical expertise and customer service which is unsurpassed in the industry.

Kingspan Insulation has a vast product range including optimum performance next generation insulation solution **OPTIM-R™**; super high performance rigid thermoset phenolic **Kooliherm®** insulation; flexible fibre-free reflective insulation **AIR-CELL®**; high performance rigid **Therma™** insulation*; and high performance rigid **Styrozone®** insulation*. The extensive range of products is suitable for a variety of applications including:

- pitched roofs;
- flat roofs;
- tapered roofing systems;
- cavity walls;
- solid walls;
- insulated dry lining;
- timber and steel framing;
- externally insulated cladding systems;
- externally insulated render systems;
- floors;
- soffits; and
- ductwork in building services applications

Kingspan Insulation also supplies:

- *Kingspan* **Thermabate®** Cavity Closer;*
- *Kingspan* **TEK®** range of structurally insulated panels;*
- the *Kingspan* **KoolDuct®** System of pre-insulated ducting;
- Pre-insulated plenum boxes;
- *Kingspan* **nilvent®** - breathable membrane for roofs and walls

Manufacturing excellence, first class customer service and unrivalled expertise in meeting the needs of the market are just some of the many strengths that Kingspan Insulation offers to designers, engineers and contractors.

**Not currently available in Australia*



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