A4/6 PS055F AW2324C
Issue 6 May 2018

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
- Made in Australia

AUSTRALIAN MADE

CODEMARK® Australia
Certificate CM20029

Fibre-free Core

Kingspan®

Low Energy – Low Carbon Buildings

Concrete Walls & Block Walls

Typical Design Detail

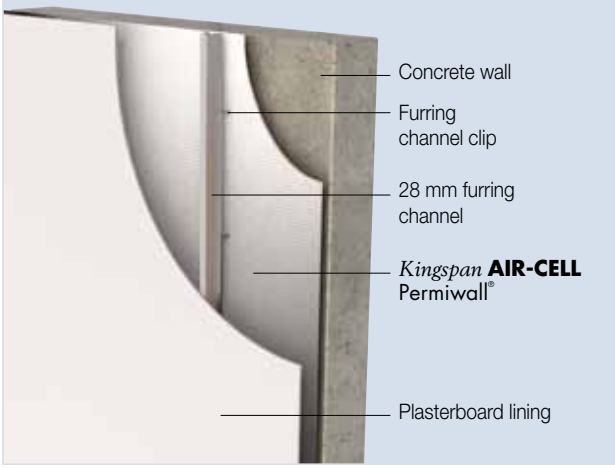

Figure 1 *Kingspan* **AIR-CELL** Permiwall® clip-and-channel system

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 CodeMark-certified *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.

A Project Specific Warranty provided by Kingspan Insulation must be submitted.

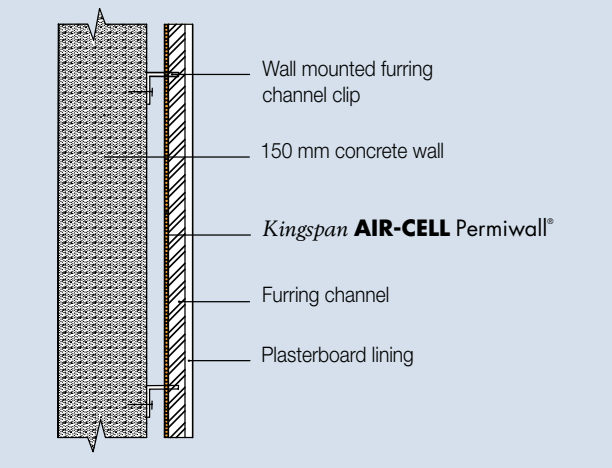

Figure 2 Side elevation of *Kingspan* **AIR-CELL** Permiwall® clip-and-channel system

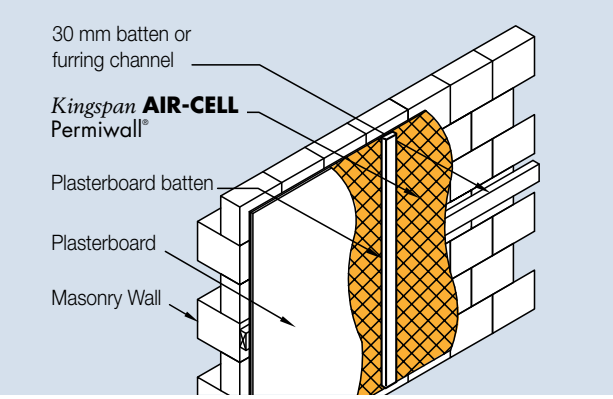

Figure 3 *Kingspan* **AIR-CELL** Permiwall® counter-batten system

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.

Alternative Installation: Counter-Batten System

1. Install chosen battens or channels at required spacing for plasterboard lining.
2. Fit K*Kingspan* **AIR-CELL** Permiwall® over battens/channels and hold in position with tape, screws, or staples.
3. Butt join rolls of *Kingspan* **AIR-CELL** Permiwall® and tape with 72 mm wide reinforced aluminium tape.
4. Install counter-batten/channel by screwing into first batten/channel.
5. Install plasterboard lining.

Scan to see the installation video

Product Details

Product Description

Australian-made *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

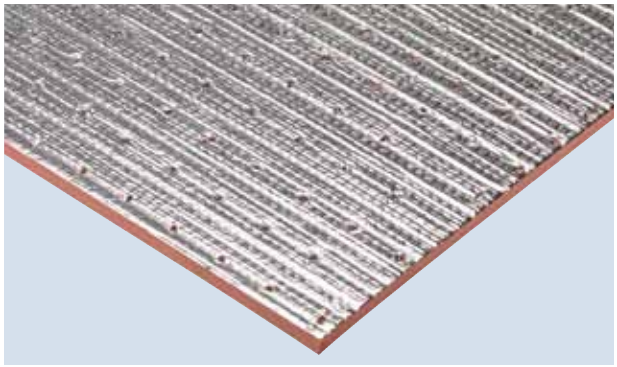

Figure 4 Vapour-permeable perforations in *Kingspan* **AIR-CELL** Permiwall®

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	Evironmental 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.