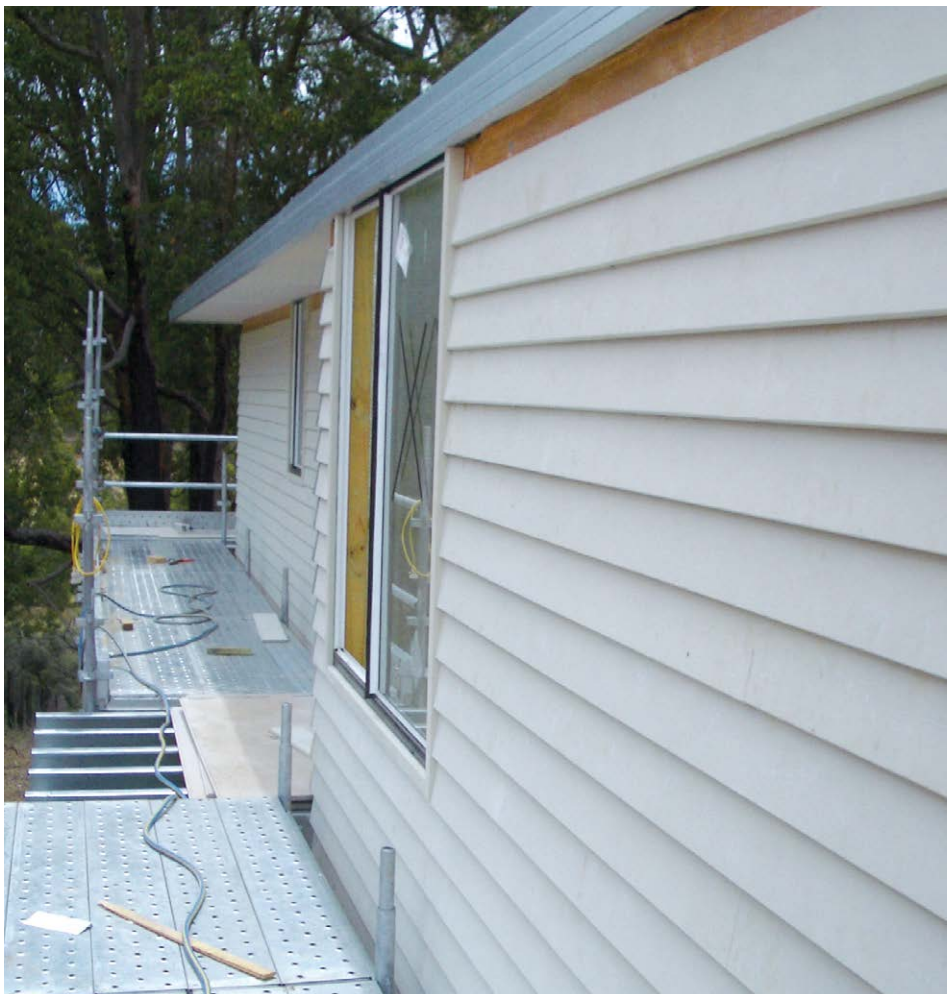


Insulation

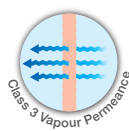


AIR-CELL[®] Permishield[®] XV 70

Vapour Permeable Reflective Insulation Membrane



- CodeMark certified for NCC compliance
- 3-in-1 Insulation, thermal break and vapour-permeable sarking
- Helps achieve the home energy efficiency provisions
- 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 4859.1:2018
- Made in Australia



Residential Reverse Brick Veneer Wall

Typical Design Details

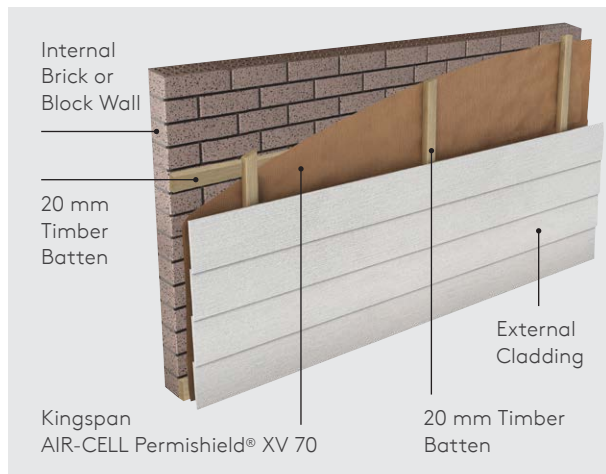


Figure 1. Kingspan AIR-CELL Permishield® XV 70 in reverse brick veneer wall installation.

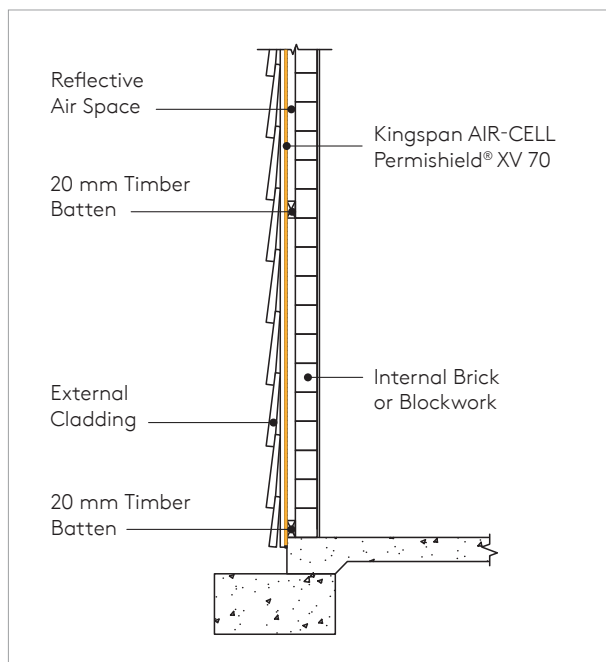


Figure 2. Side elevation of Kingspan AIR-CELL Permishield® XV 70 in a reverse brick veneer wall.

Thermal Performance

| Reverse Brick Veneer Wall | Heat flow in | Heat flow out |
|--------------------------------------|--------------|---------------|
| Kingspan AIR-CELL Permishield® XV 70 | $R_T 1.9$ | $R_T 1.8$ |

The R-values shown are Total R-values for the building element as required by the Energy Provisions of the NCC, 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 batten shall be vapour-permeable, CodeMark-certified Kingspan AIR-CELL Permishield® XV 70 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.

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

Installation Instructions

1. Roll out Kingspan AIR-CELL Permishield® XV 70 horizontally and fix to batten.
2. Cut Kingspan AIR-CELL Permishield® XV 70 carefully around doors, windows and other openings, so that it neatly abuts to frames.
3. Butt join Kingspan AIR-CELL Permishield® XV 70 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.

Residential Steel-framed Wall

Typical Design Details



Figure 3. Kingspan AIR-CELL Permishield® XV 70 on a steel-framed wall.

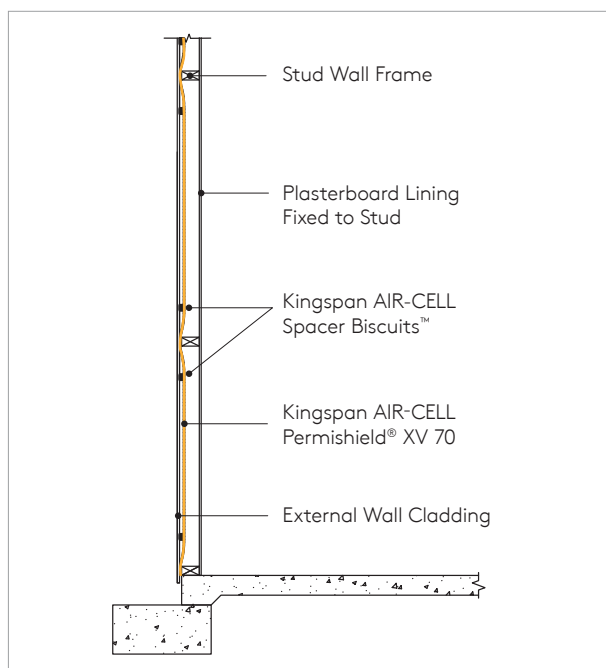


Figure 4. Side elevation of Kingspan AIR-CELL Permishield® XV 70 on a steel-framed wall.

Thermal Performance

| Steel-framed Wall | Heat flow in | Heat flow out |
|--------------------------------------|--------------|---------------|
| Kingspan AIR-CELL Permishield® XV 70 | $R_T 1.3$ | $R_T 1.3$ |

The R-values shown are Total R-values for the building element as required by the Energy Provisions of the NCC, calculated in accordance with AS/NZS 4859.2:2018 & NZS 4214:2006. 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 outside of the stud frame shall be vapour-permeable, CodeMark-certified Kingspan AIR-CELL Permishield® XV 70 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.

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

Installation Instructions

1. Fix Kingspan AIR-CELL Permishield® XV 70 loosely to the outside of frame leaving flexibility for the insulation to be dished onto the wall cavity.
2. Cut Kingspan AIR-CELL Permishield® XV 70 carefully around doors, windows and other openings, so that it neatly abuts to frames.
3. Butt join Kingspan AIR-CELL Permishield® XV 70 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® XV 70 (approximately three biscuits per square metre required).
5. Commence installing cladding in accordance with manufacturer's installation instructions.

Advisory Note:

Fibre-cement Cladded Walls

Vapour-permeable Kingspan AIR-CELL Permishield® XV 70 is recommended for cladding products that require vapour permeance.

If fibre-cement cladding products are used, the cladding should be fixed by screwing through the Kingspan AIR-CELL Permishield® XV 70 to the steel frame. Even pressure should be applied to ensure that the upper board overlap is in full contact with the lower board. If gaps occur, close using brad nails.

Care must be taken that the screw gun torque and depth settings are appropriate to apply even pressure on the Kingspan AIR-CELL Permishield® XV 70 without over-stressing the cladding material, particularly when installing cladding less than 12 mm thick that does not fit flat to the frame.

For installations with fibre-cement claddings that are less than 12 mm in thickness the Counter-batten Method is the preferred method. Please refer to the Timber-framed Walls method for more information.



Scan to see the installation video

Residential Timber-framed Wall

Typical Design Details

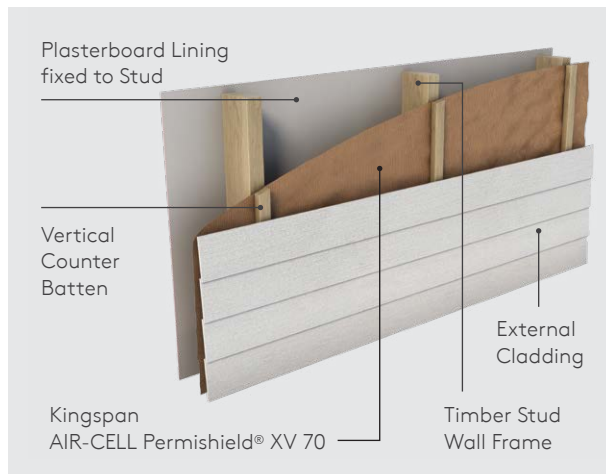


Figure 5. Kingspan AIR-CELL Permishield® XV 70 in a timber-framed wall installation using counter-battens.

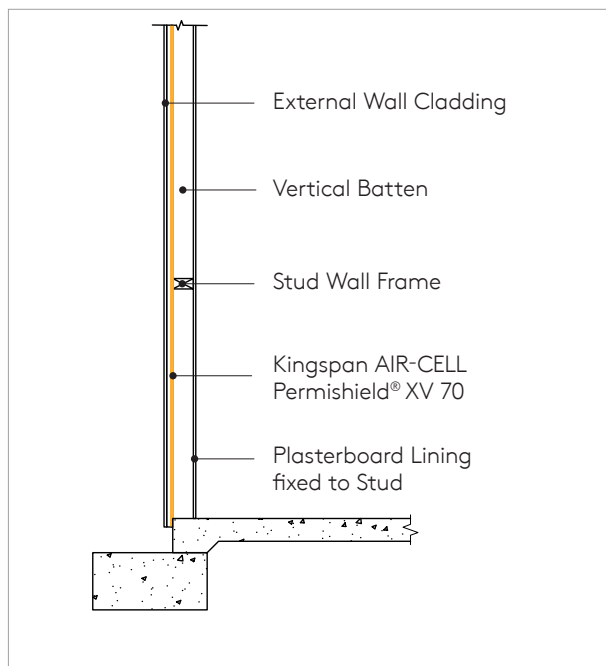


Figure 6. Side elevation of Kingspan AIR-CELL Permishield® XV 70 in a timber-framed wall.

Thermal Performance

| Steel-framed Wall | Heat flow in | Heat flow out |
|--------------------------------------|--------------|---------------|
| Kingspan AIR-CELL Permishield® XV 70 | $R_T 1.7$ | $R_T 1.7$ |

The R-values shown are Total R-values for the building element as required by the Energy Provisions of the NCC, 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 outside of the stud frame shall be vapour-permeable, CodeMark-certified Kingspan AIR-CELL Permishield® XV 70 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.

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

Installation Instructions

1. Roll out Kingspan AIR-CELL Permishield® XV 70 horizontally and fix to outside of frame.
2. Cut Kingspan AIR-CELL Permishield® XV 70 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.



Scan to see the installation video

Product Details

Product Description



Australian-made Kingspan AIR-CELL Permishield® XV 70 (patent application nos. 2015245930 (AUS) and 724525 (NZ)) is a vapour-permeable sarking and insulation wrapped up in a single product.

Kingspan CodeMark-certified Kingspan AIR-CELL Permishield® XV 70 is designed specifically for use in framed and reverse brick veneer walls behind lightweight cladding materials that require vapour permeance. It is manufactured with a patented closed-cell structure sandwiched by reflective foil surfaces and pierced with tiny and evenly-spaced breather holes.

The Kingspan AIR-CELL Permishield® XV 70 is suitable to provide a thermal break for metal framed walls on low rise structures. For consideration in high-rise building, please contact Kingspan Insulation's Technical Services Team.



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

Product Data

AIR-CELL Permishield® XV 70

| | |
|--------------------------|--|
| Product Thickness (nom.) | 7.2 mm |
| Product R-value at 23°C | R0.20 m ² .K/W |
| Roll Diameter (nom.) | 450 mm |
| Roll Weight (nom.) | 9.15 kg |
| Roll Size | 1350 mm x 22.25 m (30 m ²) |
| Reflectance | |
| Anti-Glare Face | 88% |
| Reflective Face | 97% |
| Emittance | |
| Anti-Glare Face | E0.12 |
| Reflective Face | E0.03 |
| Maximum Span Distance | 2.4 m |

Management Standards

| Standard | Management System |
|----------------|---|
| ISO 9001:2015 | Quality Management |
| ISO 14001:2015 | Environmental Management |
| ISO 45001:2018 | Occupational Health & Safety Management |

Environmental Data

| Aspect | Characteristic |
|--------------|--|
| Re-usability | Re-usable if removed with care (long term of service expected) |
| Water Use | No water used in Kingspan's manufacturing process |

Product Details

Product Specifications

| Property | Test Method / Standard | Specification | Classification |
|--------------------------|--------------------------------|---|-------------------------------------|
| Flammability Index | AS 1530.2:1993 | ≤ 5 | Low |
| Material R-value | ASTM C518-2017 at 23°C | R0.20 m ² .K/W | - |
| IR Emittance | AS/NZS 4201.5:1994 | Reflective Face: 0.03 Anti-Glare Face:0.12 | IR Reflective IR Semi Reflective |
| IR Emittance | - | - | Category RS |
| Burst Strength | AS 3706.4:2012 (CBR) | 0.9 kN | - |
| Vapour Control | ASTM E96 Part B:2016 | Vapour Permeable 0.300 µg/N.s | Class 3 |
| Water Control | AS/NZS 4201.4:1994 | Pass | Water Barrier |
| Moisture Shrinkage | AS/NZS 4201.3:1994 | < 0.5% | - |
| Dry Delamination | AS/NZS 4201.1:1994 | Pass | - |
| Wet Delamination | AS/NZS 4201.2:1994 | Pass | - |
| Surface Water Absorbency | AS/NZS 4201.6:1994 | ≥ 100g/m ² | High |
| Corrosion Resistance | AS/NZS 4859.1:2018 App. E | Pass | - |
| Electrical Conductivity | AS/NZS 4200.1:2017 - c.5.3.1.2 | Resistance ≤ 10MΩ | Electrically Conductive |

Other Information

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. Consideration of the condensation management provisions of the NCC, relevant to the Climate Zone should be undertaken, when selecting a sarking-type material.

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).

These instructions 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 3999:2015 and AS/NZS 4200.2:2017 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

Australia

Kingspan Insulation Pty Ltd
TF: 1300 247 235
E: info@kingspaninsulation.com.au
www.kingspaninsulation.com.au



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