

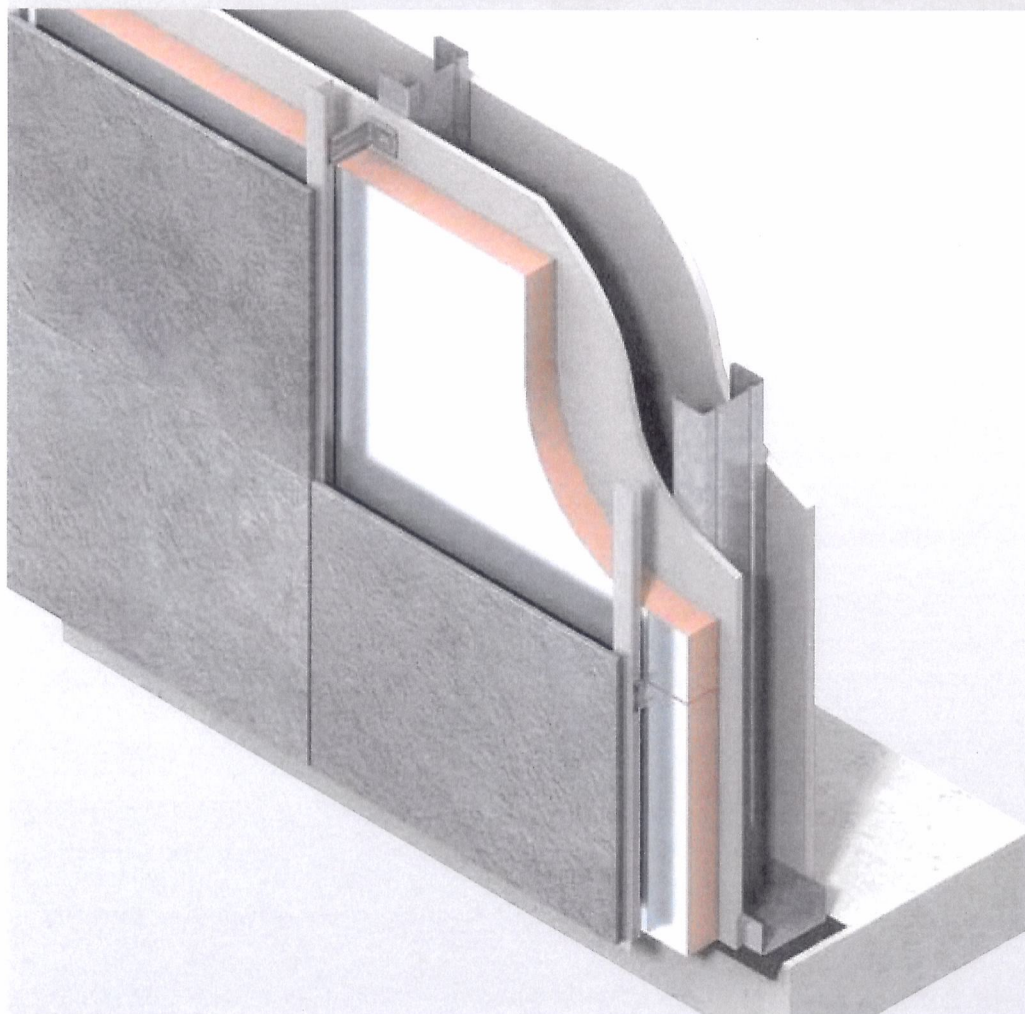
Insulation



A4/6 K15 AW1413
Issue 3 Oct 2013

Kooltherm® K15 Rainscreen Board

INSULATION FOR USE BEHIND RAINSCREEN
CLADDING SYSTEMS



- Super high performance rigid thermoset insulation
- Fibre-free insulation core
- Suitable for use in rainscreen cladding systems
- Clear cavity is maintained – resists moisture penetration
- Resistant to the passage of water vapour
- Easy to handle and install
- Ideal for new build and refurbishment
- CFC/HCFC-free with zero Ozone Depletion Potential (ODP)
- Compliant with AS/NZS 4859.1



Low Energy –
Low Carbon Buildings

Typical Constructions and Total R-values

Insulated Rainscreen Cladding Systems On Concrete Wall

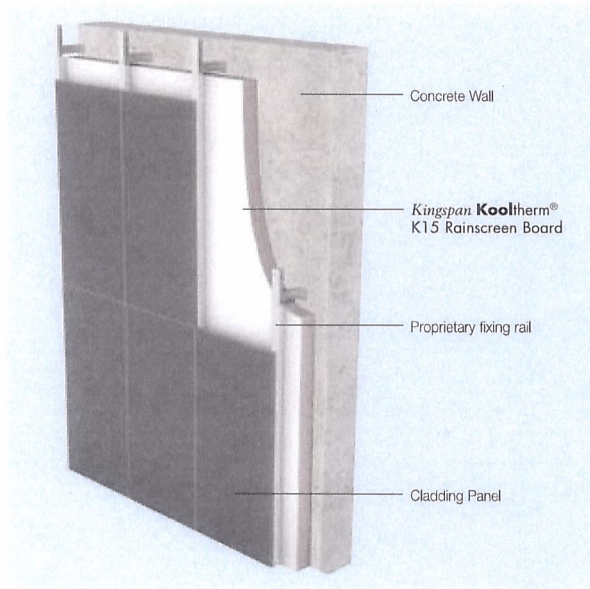


Figure 1

Total R-values for various thicknesses of Kingspan Kooltherm® K15 Rainscreen Board		
Product Thickness (mm)	Heat flow in	Heat flow out
40	R _T 2.2	R _T 2.2
50	R _T 2.8	R _T 2.8
60	R _T 3.3	R _T 3.3
70	R _T 3.8	R _T 3.8

Assumptions

Because rainscreen systems are proprietary and utilise different mechanisms for attaching cladding panels to the wall structure, it is advisable to contact the Kingspan Insulation Technical Service Department (see rear cover) for specific R-value calculations.

Calculations are based on traditional ventilated Rainscreen façade system.

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 Kooltherm® 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.

Insulated Rainscreen Cladding Systems on Steel-framed Wall

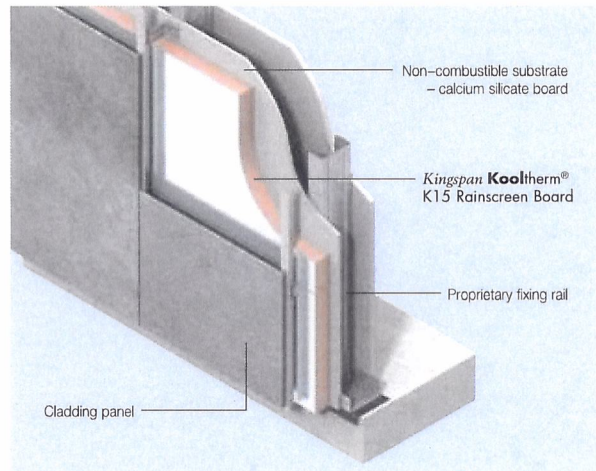


Figure 2

Total R-values for various thicknesses of Kingspan Kooltherm® K15 Rainscreen Board		
Product Thickness (mm)	Heat flow in	Heat flow out
40	R _T 2.3	R _T 2.3
50	R _T 2.9	R _T 2.9
60	R _T 3.4	R _T 3.4
70	R _T 3.9	R _T 3.9

Product Details

Product Description

Kingspan Kooltherm® K15 Rainscreen Board is a super high performance, fibre-free rigid thermoset insulation, sandwiched between two layers of highly reflective aluminium foil autohesively bonded to the insulation core during manufacture.

Kingspan Kooltherm® K15 Rainscreen Board is manufactured without the use of CFCs/HCFCs and has zero Ozone Depletion Potential (ODP).

Product Data

Thermal Conductivity (λ-value)	0.020 W/m-K (Insulant thickness ≥ 45 mm) 0.021 W/m-K (Insulant thickness 25 - 44 mm)
Emittance (Foil Faces)	E0.14
Product Dimensions	2270 mm x 1200 mm (2.72 m ²)
Product Thickness	40, 50, 60, 70 mm <i>Other thicknesses available upon enquiry. Minimum order quantities apply</i>

Product R-value

Product Thickness	Product R-value
40 mm	R1.9
50 mm	R2.5
60 mm	R3.0
70 mm	R3.5

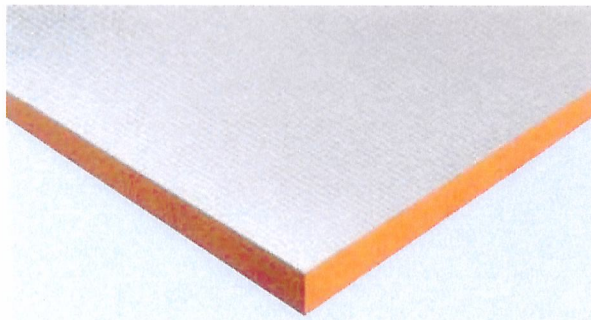


Figure 3 Super high performance **Kingspan Kooltherm® K15 Rainscreen Board**

Glazed Curtain Walling Systems

Kingspan Kooltherm® K15 Rainscreen Board should not be used directly behind glazed curtain walls.

Please contact the Kingspan Insulation Technical Service Department (see back cover for details) for advice regarding the suitability of **Kingspan Kooltherm® K15 Rainscreen Board** in other glazed applications.

Specification Guide

Kingspan Kooltherm® K15 Rainscreen Board

The wall insulation shall be **Kingspan Kooltherm® K15 Rainscreen Board** ___ mm thick comprising a CFC/HCFC-free and zero Ozone Depletion Potential (ODP) rigid thermoset insulation core with composite foil facings on both sides manufactured under a management system certified to BS / I.S. EN ISO 9001:2008, BS / I.S. EN ISO 14001:2004 and BS / I.S. OHSAS 18001:2007 by Kingspan Insulation Pty Limited and shall be installed in accordance with the instructions issued by them.

Standards and Approvals

Kingspan Kooltherm® K15 Rainscreen Board is manufactured to the highest standards and certified under the following management systems:

Standard	Management System
BS / I.S. EN ISO 9001:2008	Quality Management
BS / I.S. EN ISO 14001:2004	Environmental Management
BS / I.S. OHSAS 18001:2007	Health and Safety Management

Product Testing

Characteristic	Standard	Result
Compressive Strength	BS / I.S. EN 826:1996	Typically exceeds 100 kPa at 10% compression
Water Vapour Resistance	BS EN 12086:1997 / I.S. EN 12086:1998	> 100 MN-s/g-m

Fire Performance

Test	Test Method	Result
Ignitability, Flame spread Heat release, Smoke release	AS 1530.3	0 / 0 / 0 / ≤ 3
Fire Propagation Surface Spread of Flame	BS 476 Part 6 BS 476 Part 7	Group 0*

Fire Performance of External Cladding Systems (Test methods for non-load bearing external cladding systems applied to the face of a building)

BS 8414

The tested product meets the criteria stated within BRE 135 (Fire performance of external thermal insulation for walls of multi storey buildings) and is therefore acceptable for use above 18 metres in accordance with the Building Regulations/Standards.**

* Applies only to the **Kingspan Kooltherm®** insulation core.

** Fire stopping was provided by a ventilated rainscreen barrier system, comprising nominal 2.5 mm thick graphite-based intumescent strip bonded to nominal 0.6 mm thick galvanized steel sheet, and positioned 0.5 m and 4m above the fire chamber on both the main face and the wing face.

Installation Instructions

Durability

If correctly applied, **Kingspan Kooltherm**[®] products can be expected to have a long life of service.

Their durability depends on the supporting structure and the conditions of its use.

Kingspan Kooltherm[®] products are warranted for a period of 10 years for both residential and commercial installations.*

* Subject to the terms of the complete **Kingspan Kooltherm**[®] warranty document which is available upon request or downloadable from www.kingspaninsulation.com.au.

Environmental Data

Aspect	Characteristic
Recyclability	Non-contaminated insulation site waste is recyclable, but there are currently no facilities in Australia to process returned material
Re-usability	Re-usable if removed with care (long term of service expected)
Water Use	No water used in Kingspan Insulation's manufacturing process
Blowing Agent Global Warming Potential (GWP)	Manufactured with a blowing agent that has low GWP
Blowing Agent Ozone Depletion Potential (ODP)	Manufactured with a CFC/HCFC-free blowing agent that has zero ODP
Packaging	Contains 0% recycled product Polythene wrap and EPS skids 100% recyclable

Because rainscreen cladding systems are proprietary and utilise different mechanisms for attaching cladding panels to the wall structure, installation guidance should be sought from the system manufacturer.

However, in the absence of any other guidance the instructions laid out below may be followed.

- Insulation boards should be installed break-bonded with board edges lightly butted.
- Boards should be cut neatly around fixings, brackets or top hats, so as to avoid gaps.
- The number and type of mechanical fixings required to fix **Kingspan Kooltherm**[®] K15 Rainscreen Board will vary with the geographical location of the building, the local topography, the height and width of the wall concerned, the wall structure, and the type of mechanism being used to attach the cladding system.
- When offered to a continuous substrate (e.g. Concrete/Block) a minimum of 9 fixings are required to secure the insulation board to the wall structure.
- Please refer to the recommended fixing patterns (see Figure 4)
- When offered directly to a framed structure, the **Kingspan Kooltherm**[®] K15 Rainscreen Board should not span greater than 600 mm centres.
- For framed walls, fixings should not exceed 600 mm centres both vertically and horizontally.
- Unsupported board edges must not overhang more than 300 mm.
- The fasteners should be evenly distributed over the whole area of the board with a minimum diameter head of 35 mm.
- Fasteners at board edges must be located >50 mm and <150 mm from edges and corners of the board and not overlap board joints.
- The joints of **Kingspan Kooltherm**[®] K15 Rainscreen Board should always be taped using a 72 mm min. wide self-adhesive aluminium foil tape.
- In the absence of other protection, exposed edges of **Kingspan Kooltherm**[®] K15 Rainscreen Board should be protected by a suitable self-adhesive aluminium foil tape, with a 50 mm min. wide overlap onto the insulation board face.

Installation Instructions

(continued)

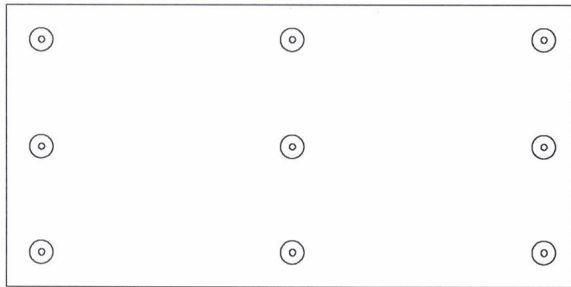


Figure 4 Fastener pattern (9 No. per board) Board size to 2.270 x 1.200 m – 3.3 fixings/m²

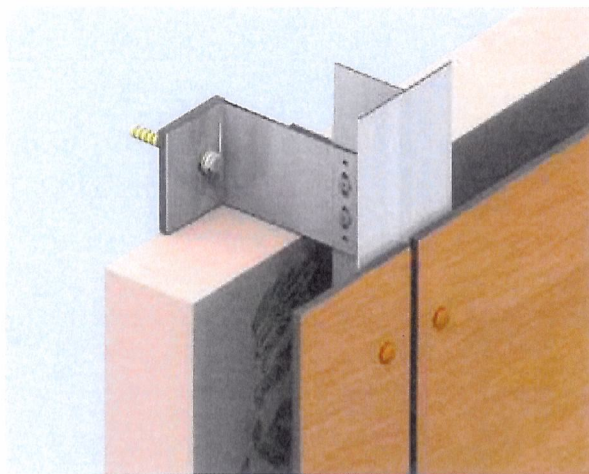


Figure 5 Example of cladding fixing

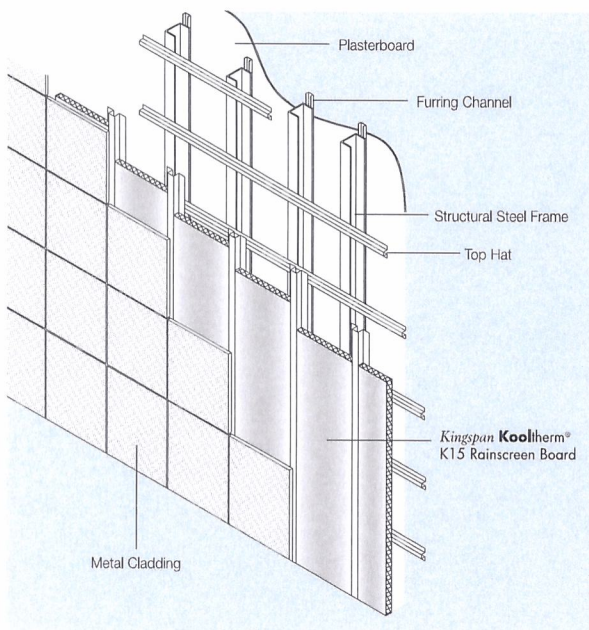


Figure 6 Alternative system example (metal clad steel-framed wall with Kingspan Kooltherm[®] K15 Rainscreen Board)

General Requirements

Cutting

Cutting should be carried out either by using a fine toothed saw, or by scoring with a sharp knife, snapping the board over a straight edge and then cutting the facing on the other side. Ensure accurate trimming to achieve close-butting joints and continuity of insulation.

Packaging

According to quantity, the boards are supplied in packs, labelled and shrink-wrapped in polythene.

Handling and Storage

Storage

The packaging of Kingspan Kooltherm[®] should not be considered adequate for long term outdoor protection. Ideally boards should be stored inside a building. If, however, outdoor storage cannot be avoided then the boards should be stacked clear of the ground and covered with an opaque polythene sheet or weatherproof tarpaulin. Boards that have been allowed to get wet should not be used.

Resistance to Solvents

The insulation core is resistant to short-term contact with petrol and with most dilute acids, alkalis and mineral oils. However, it is recommended that any spills be cleaned off fully before the boards are installed. Ensure that safe methods of cleaning are used, as recommended by suppliers of the spilt liquid. The insulation core is not resistant to some solvent-based adhesive systems, particularly those containing methyl ethyl ketone. Adhesives containing such solvents should not be used in association with this product. Damaged boards or boards that have been in contact with harsh solvents or acids should not be used.

OH & S

Kingspan Insulation products are chemically inert and safe to use. A Product Safety Information sheet is available from Kingspan Insulation Pty Ltd.

Please note that the reflective surfaces on this product are designed to enhance their thermal performance. As such, they will reflect light as well as heat, including ultraviolet light. Therefore, if these boards are being installed during bright or sunny weather, it is advisable to wear UV protective sunglasses or goggles and if the skin is exposed for a significant period of time, to protect bare skin with a UV block sun cream.

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