



Concrete Walls & Block Walls

INSULATION GUIDE



- Super high performance solutions
- Minimises wall footprint, maximising internal floor space
- Wall cavities remain unfilled and accessible for services
- Fibre-free, non-allergenic, non-irritant solutions available
- Quick and easy to install
- Strong, tough, durable
- Ideal for new builds and refurbishments
- Compliant with AS/NZS 4859.1

Kooltherm® K12 Framing Board

Typical Design Detail

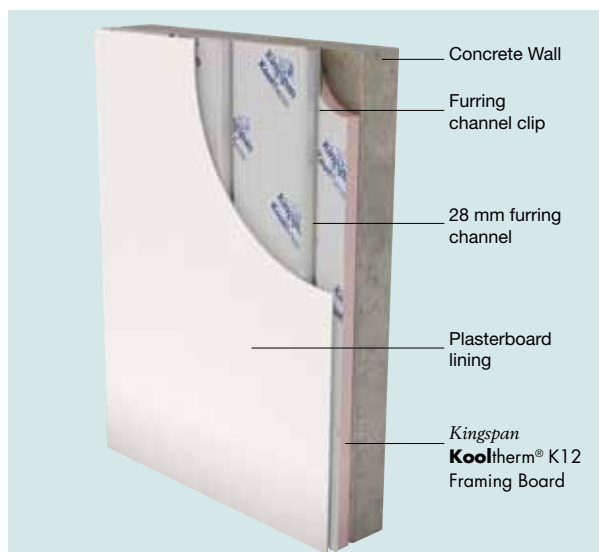


Figure 1 Kingspan **Kooltherm**® K12 Framing Board clip-and-channel system

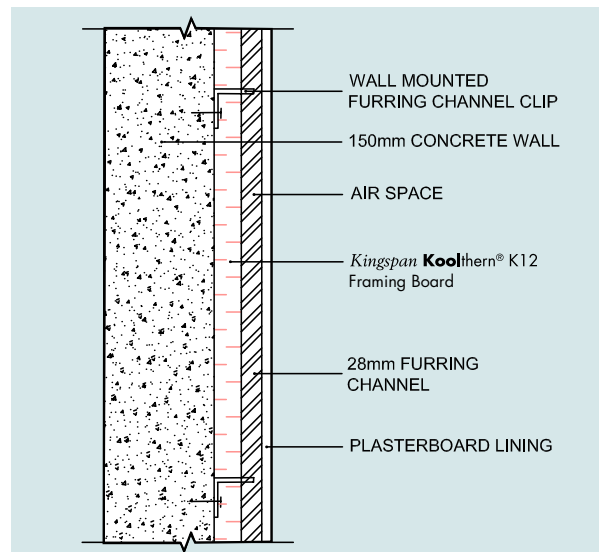


Figure 2 Side elevation of Kingspan **Kooltherm**® K12 Framing Board clip-and-channel system

Thermal Performance

Concrete Wall (150 mm)		
Product Thickness (mm)	Heat flow in	Heat flow out
30	R _T 2.1	R _T 2.1
40	R _T 2.5	R _T 2.5

Block Wall (140 mm)		
Product Thickness (mm)	Heat flow in	Heat flow out
30	R _T 2.1	R _T 2.1
40	R _T 2.6	R _T 2.6

The R-values shown are Total R-values for the building element and are calculated in accordance with AS/NZS 4859.1 and NZS 4214. 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.

Specification Guide

The insulation fixed to the internal side of the wall over the furring channel clips shall be Kingspan **Kooltherm**® K12 Framing Board _____ mm thick CFC/HCFC-free and zero Ozone Depletion Potential (ODP) rigid thermoset insulation 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.

Installation Instructions

1. Install chosen furring channel clips at required spacing for plasterboard lining.
2. Fit Kingspan **Kooltherm**® K12 Framing Board over furring channel clips by pushing over the clips to abut the wall, and so that the wings of the clips penetrate the board. Care should be taken to avoid the foil facing of the Kingspan **Kooltherm**® K12 Framing Board separating from the insulation core by neatly trimming the foil face at the point where the furring channel clip penetrates the insulation.
3. Butt join boards of Kingspan **Kooltherm**® K12 Framing Board to provide a continuous insulation layer.
4. Install furring channels by clipping into channel clips. Furring channels should be tight against the face of the Kingspan **Kooltherm**® K12 Framing Board. Where furring channels are not tight to the insulation contact Kingspan Insulation Technical Service for further advice.
5. Install plasterboard lining.

Taping

It is considered best practice to tape joins of Kingspan **Kooltherm**® K12 Framing Board boards in this system with 48 mm wide reinforced aluminium foil tape. Refer to the "General Requirements" section towards the back of this document for more important information regarding taping.



Kooltherm® K17 Insulated Plasterboard

Typical Design Detail



Figure 3 *Kingspan Kooltherm® K17 Insulated Plasterboard* for plaster daub/adhesive bonding

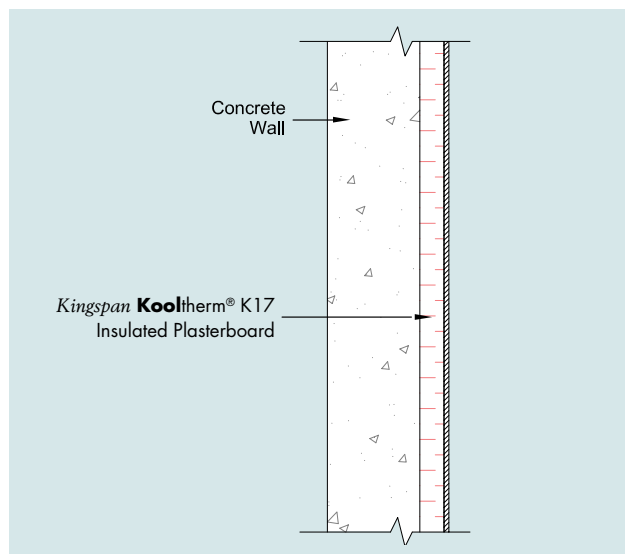


Figure 4 Side elevation of *Kingspan Kooltherm® K17 Insulated Plasterboard* bonded to a concrete wall

Thermal Performance

Concrete Wall (150 mm)		
Product Thickness (inc. Plasterboard)	Heat flow in	Heat flow out
35 mm	R _T 1.5	R _T 1.5
40 mm	R _T 1.7	R _T 1.7
50 mm	R _T 2.2	R _T 2.2
60 mm	R _T 2.8	R _T 2.8
70 mm	R _T 3.3	R _T 3.3
80 mm	R _T 3.8	R _T 3.8
90 mm	R _T 4.3	R _T 4.3
Block Wall (140 mm)		
Product Thickness (inc. Plasterboard)	Heat flow in	Heat flow out
35 mm	R _T 1.5	R _T 1.5
40 mm	R _T 1.8	R _T 1.8
50 mm	R _T 2.2	R _T 2.2
60 mm	R _T 2.8	R _T 2.8
70 mm	R _T 3.3	R _T 3.3
80 mm	R _T 3.8	R _T 3.8
90 mm	R _T 4.3	R _T 4.3

The R-values shown are Total R-values for the building element and are calculated in accordance with AS/NZS 4859.1 and NZS 4214. *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.

Specification Guide

The wall dry-lining insulation shall be *Kingspan Kooltherm® K17 Insulated Plasterboard* ____ mm thick, comprising a CFC/HCFC-free and zero Ozone Depletion Potential (ODP) rigid thermoset insulation core with 10 mm plasterboard facing bonded to its front surface and a tissue based facing on its reverse surface, 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.

Installation Instructions

Dry Wall Plasterboard

Kingspan Kooltherm® K17 Insulated Plasterboard can be applied utilising a variety of traditional or modern dry-lining techniques, to dry and structurally sound walls. These include traditional plaster daub bonding and construction adhesive bonding methods. The particular system employed will depend on the construction or design of the wall to which *Kingspan Kooltherm® K17 Insulated Plasterboard* is to be fixed. If an acceptable adhesive bond cannot be achieved due to the wall surface, consideration should be given to a mechanically fixed option. The tapered edge to the plasterboard enables a flat seamless surface equal to traditional plaster finishes after the correct jointing procedures as per plasterboard manufacturer's recommendation have been completed.

Traditional Plaster Daub Bonding

This method is for applications to brick, block or concrete masonry cavity walls which are free from moisture penetration.

1. Ensure that the wall surface to be bonded to is free from oil, grease, paint, release agent, or any contaminate that may affect the bond of the adhesive to the wall.
2. Mix the plaster adhesive to a slightly wetter consistency by adding approximately 10% more water than normal.
3. Set out a continuous fillet of gypsum adhesive around perimeter wall and ceiling junctions, and around any openings in order to provide a seal.
4. Apply daubs of the gypsum adhesive to the wall. The number, size and lay-out of the daubs will depend on the chosen gypsum adhesive manufacturer's recommendations.
5. Locate boards against the adhesive daubs and tap back to align with predetermined guidelines on the floor and ceiling.
6. Provide temporary mechanical support to the *Kingspan Kooltherm® K17 Insulated Plasterboard* for at least 24 hours.

Installation Instructions (continued)

7. Mechanical fixings are recommended to complement the plaster daub bond. Apply at a rate of 2 per board after the plaster daubs have set, positioned 15 mm in from the board edge and at mid height with a nominal 25 mm embedment into the solid wall (excluding plaster daub thickness). (Refer to fixing manufacturer instructions for more information).
8. It is recommended that mechanical fixings are positioned in the tapered edge of the boards so that they are covered when the board is finished, (e.g. joints taped and skim coating) at mid height. Boards should be fitted tight to the ceiling/joists.

Construction Adhesive Bonding

This method is for application to brick, block or concrete masonry cavity walls which are free from moisture penetration.

1. Ensure that the wall surface to be bonded to is free from oil, grease, paint, release agent, or any contaminate that may affect the bond of the adhesive to the wall.
2. Gun apply a continuous blob of construction adhesive around perimeter wall and ceiling junctions, and around any openings, such as windows and doors, in order to provide a seal.
3. Gun apply blobs of construction adhesive to the wall or the back of the board approximately 25 mm in diameter (single squeeze), at 300 mm centres in both directions or to specific adhesive manufacturer's instructions. Ensure that the blobs adjacent to a board joint are approximately 25 mm in from the edge to avoid bridging the joint.
4. Tap the board back firmly using a straightedge, ensuring that the vertical edge is plumb.
5. Continue dry lining in the same manner.
6. Apply fixings and temporary mechanical support in the same manner as Traditional Plaster Daub Bonding.

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.

Please note that scoring and snapping would not apply to *Kingspan Kooltherm® K17 Insulated Plasterboard* due to the bonded plasterboard lining.

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

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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.co.nz



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