

Insulation



Kooltherm® K12 Framing Board

Enhancing Comfort and Facilitating Home Energy Efficiency Compliance



- Rigid thermoset phenolic insulation
- Fibre-free, closed cell insulation core
- Can be used between studs or as an insulating sheathing
- Suitable for use with timber frame and steel frame wall constructions
- Can eliminate cold bridging
- Resistant to the passage of water vapour
- NCC and AS/NZS 4859.1:2018 compliant
- CodeMark-certified for NCC compliance
- Made in Australia
- Suitable for use with framed wall constructions in NCC Class 1 houses



Typical Construction

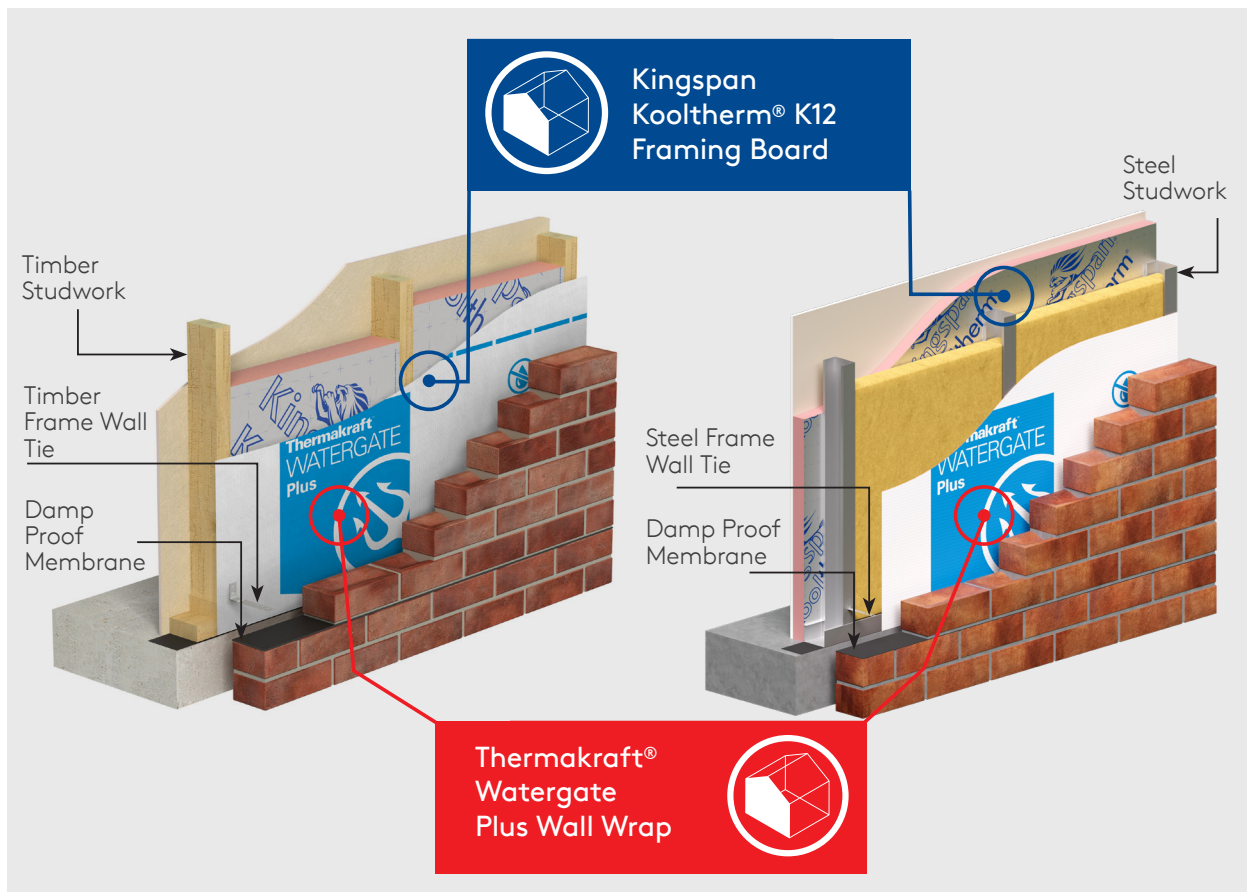


Figure 1. Kingspan Kooltherm® K12 Framing Board in between Timber Studs and Kingspan Kooltherm® K12 Framing Board as Continuous Insulation, Internally lined for Steel Frame.

Product Details

Product Description

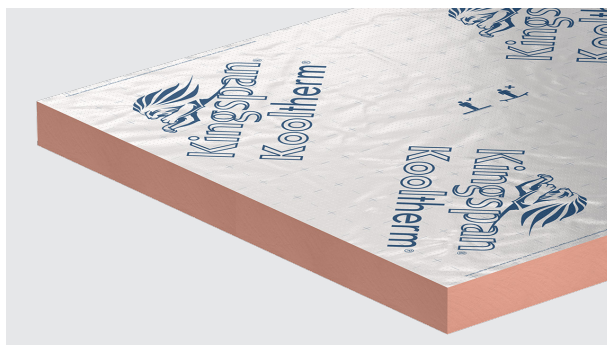


Figure 2. Kingspan Kooltherm® K12 Framing Board.

Kingspan Kooltherm® K12 Framing Board is a rigid thermoset phenolic insulation with a fibre-free core, faced on both sides with a composite foil autohesively bonded to the insulation core during manufacture. This reflective surface improves the thermal resistance of unventilated cavities adjacent to the board.

Product Data

Declared Thermal Conductivity (λ -value) AS/NZS 4859.1:2018 / ASTM C518-2017	0.022 W/m.K at 23°C (Insulant Thickness \geq 45 mm)
Emittance (Foil Face) ASTM C1371:2015	E0.06
Product Dimensions	403mm x 1200mm (80mm) 413mm x 1200mm (80mm) 553mm x 1200mm (80mm) 563mm x 1200mm (80mm)
Nominal Product Thickness	25, 80 mm

Product R-value

Nominal Product Thickness	Declared Product R-value at 23°C
25 mm	R1.10
80 mm	R3.60

Specification Guide

Kingspan Kooltherm® K12 Framing Board

The wall insulation shall be CodeMark-certified Kingspan Kooltherm® K12 Framing Board ____ mm thick, with a tested smoke obscuration of not more than 100 m²/kg, comprising a rigid thermoset phenolic insulation core with composite foil facings on both sides manufactured under a management system certified to ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 and ISO 50001:2018 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.

Standards and Approvals

Kingspan Kooltherm® K12 Framing Board is manufactured to the highest standards and certified under the following management systems:

Standard	Management System
ISO 9001:2015	Quality Management
ISO 14001:2015	Environmental Management
ISO 45001:2018	Occupational Health and Safety
ISO 50001:2018	Energy Management

Product Testing

Characteristic	Standard	Result
Compressive Stress (Insulant)	AS 2498.3:1993	On average exceeds 100 kPa at 10% compression
Water Vapour Transmission	ASTM E96 / E96M - 2022	> 35 MN.s/g

Fire Performance

Test	Test Method	Result
Early Fire Hazard Properties. (Ignitability, Flame spread, Heat release, Smoke release)	AS 1530.3:1999	Spread of Flame Index: 0 Smoke Development \leq 3

Fire Resistance

Kooltherm® K12 Framing Board is a suitable solution for framed walls in NCC Class 1 houses.

For multi-storey Construction Types A & B walls in NCC Class 2 buildings applications, please contact Kingspan Insulation Technical Services on 1300 247 235 or email technical@kingspaninsulation.com.au for further guidance.

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

Product Details

Environmental Data

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

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.

Protection during Construction

During construction, insulation boards should be protected from the elements, particularly hot sun and rain, until they are enclosed by the final external cladding.

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.

Safety Information

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.

Foil facings are conductive to electricity – avoid contact with un-insulated electrical cables and fittings.

Installation must be in accordance with AS 3999:2015 Bulk Thermal Insulation Installation and AS 3000:2018 Electrical Installations (Wiring Rules).

Installation Instructions

In Between Stud Insulation



Figure 3. Kingspan Kooltherm® K12 Framing Board in between Timber Studs

1. Choose one of the 4 x width size Kooltherm® K12 Framing Board that best fits the stud frame dimensions, then insert a full size Kooltherm® K12 Framing Board into wall cavity between stud frames.
2. Where there is a gap between the full size batt and the noggin above, insert an offcut of Kooltherm® K12 Framing Board to fill the gap.
3. If there is a gap on the vertical edge of the Kooltherm® K12 Framing Board, fill with HB FulaFoam Pro.
4. Where services or small voids are present, use glasswool insulation to fill gaps around services and voids.

Tips and Tools

1. Fine tooth hand saw
2. Square edge to cut
3. 1 x can foam per home plus foam gun and solvent

Installation Instructions

Internal Insulation

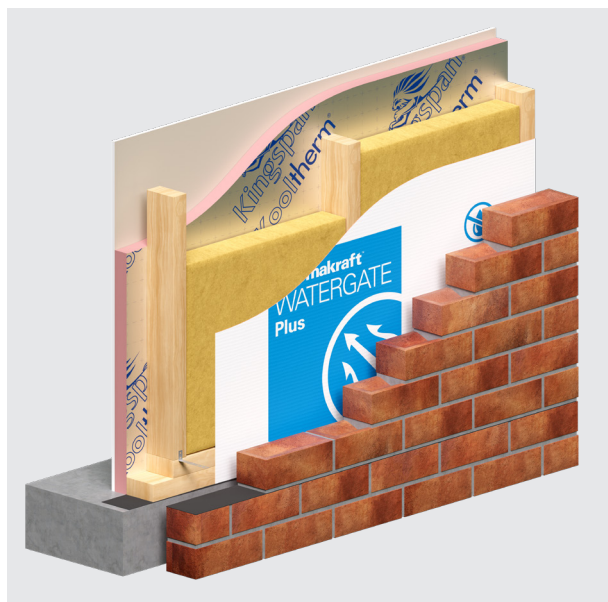


Figure 4. Internally Lined Continuous Insulation for Timber Frame

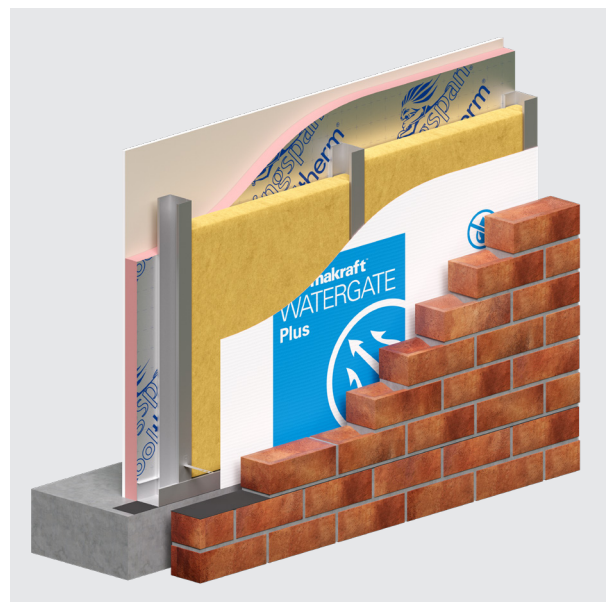


Figure 5. Internally Lined Continuous Insulation for Steel Frame

1. Confirm that the stud frame is clean, dry, and free from dust, debris, or any loose materials that could affect installation integrity.
2. Position the Kingspan Kooltherm® K12 insulation boards onto the inside face of the frame, ensuring a firm and uniform application. Align the boards correctly and ensure they are flush with one another.
3. Secure the boards in place using mechanical fixings, such as screws or nails, ensuring that the fixings penetrate through the Kingspan Kooltherm® K12 and into the frame, adequately holding the boards in position.
4. Verify that the boards are securely fastened, with no visible gaps between adjacent boards or at their edges.
5. Attach the internal lining directly to the Kingspan Kooltherm® K12 boards, using appropriate mechanical fixings. Ensure that the fixings fully penetrate the insulation and engage with the frame, securely fastening the internal lining in place.

Installation Instructions

External Insulation*

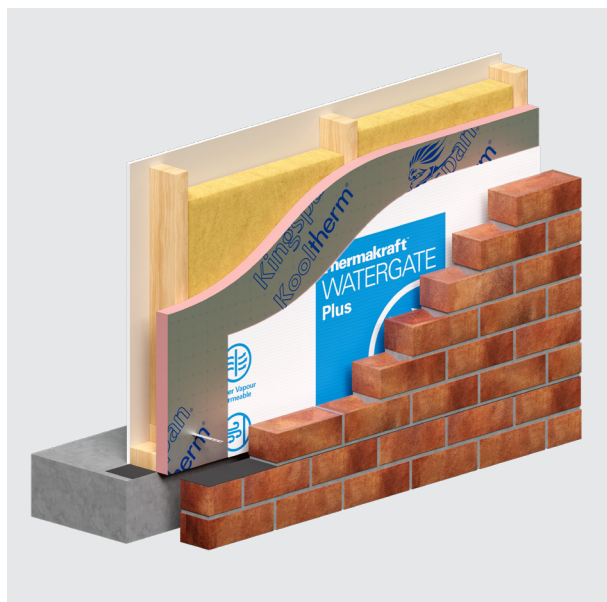


Figure 6. Externally* Lined Continuous Insulation for Timber Frame

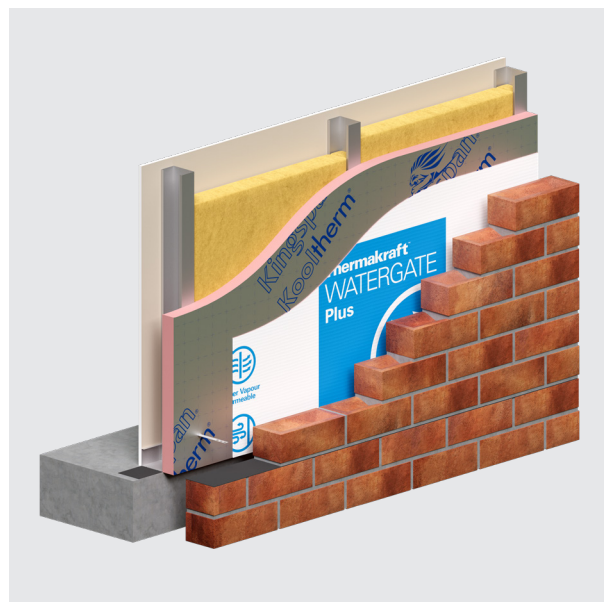


Figure 7. Externally* Lined Continuous Insulation for Steel Frame

1. Ensure that stud spacings do not exceed 600 mm centres.
2. Attach appropriate wall ties to frame at spacings required for the masonry external leaf.
3. Fix Kingspan Kooltherm® K12 Framing Board to the external surface of the frame structure ensuring vertical board joints coincide with a vertical member.
4. Ensure that the boards are lightly butted and continuity of insulation is maintained.
5. Use large headed galvanised clout nails or screws as fixings prior to the insulation boards being tied to the frame with an appropriate timber frame wall tie and insulation retaining disc.
6. Ensure that fixings are coincident with the underlying timber studs, top and bottom wall plates.
7. Construct the outer leaf of masonry in the conventional manner, using appropriate wall ties to hold the two wall leaves together.
8. Ensure that a residual cavity of at least 25mm is maintained in accordance with the moisture penetration provisions of the NCC. Cavity width should not exceed 75mm.

* A performance solution may be required for any external application of Kooltherm to the frame.

Contact Details

Australia

Kingspan Insulation Pty Ltd

T: 1300 247 235

E: info@kingspaninsulation.com.au

www.kingspaninsulation.com.au



© Kingspan, Kooltherm and the Lion Device are Registered Trademarks of the Kingspan Group plc in Australia and other countries. All rights reserved. © Kingspan Insulation Pty Ltd.

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 <https://www.kingspan.com/au/en/products/insulation/wall-insulation/kooltherm-k12-framing-board/>

