

Product Data Sheet

Kooltherm® K12 Framing Board

Wall Insulation



Kooltherm®

**Kingspan®**

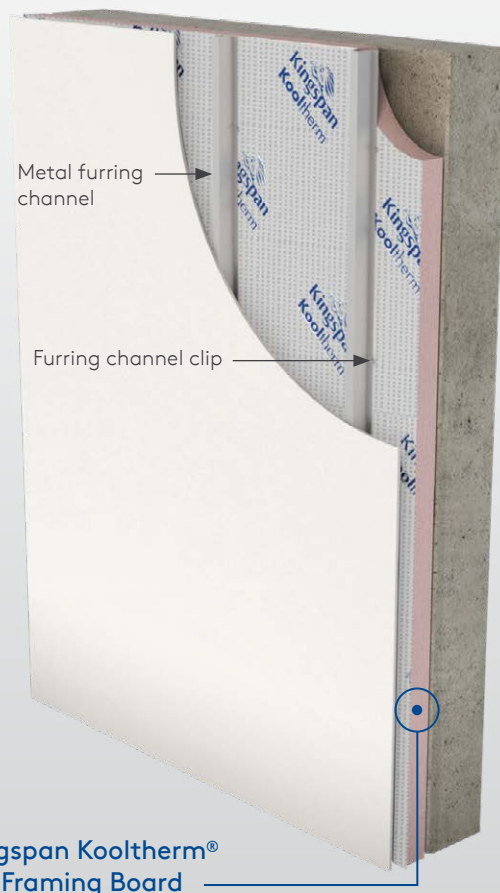
Kooltherm® K12 Framing Board

Product Description

Kooltherm®

Kooltherm K12 Framing Board is a super high performance, fibre-free rigid thermoset phenolic insulation, faced on both sides with a low emissivity composite foil autohesively bonded to the insulation core during manufacture. This reflective low emissivity surface improves the thermal resistance of a cavity adjacent to the board.

Kooltherm K12 is manufactured without the use of CFCs/HCFCs and has zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP).



Kingspan Kooltherm®
K12 Framing Board

Figure 1.
Concrete Wall Installation (Clip/Channel System)

- High performance rigid thermoset phenolic insulation
- Fibre-free, closed cell insulation core
- Can be used between wall framing or as continuous insulation
- Can eliminate thermal bridging
- Easy to handle and install
- Ideal for new build or refurbishment
- No CFC or HCFC used in manufacture
- Has zero ODP and low GWP
- NZBC and AS/NZS 4859.1:2018 compliant
- CodeMark-certified for NZBC compliance



Kooltherm® K12 Framing Board

Product Performance Data

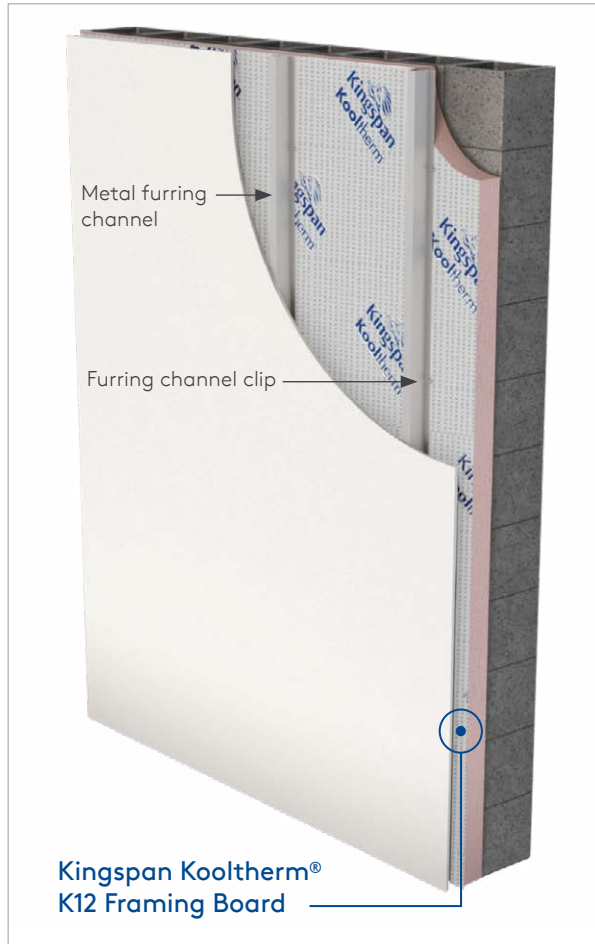


Figure 2. Block Wall Installation (Clip/Channel System)

Product Data	
Thermal Conductivity (λ -value) at 15°C	0.022 W/mK (Insulant Thickness \geq 45 mm) 0.023 W/mK (Insulant Thickness 25 - 44 mm)
Emittance (Foil Face)	E0.06
Product Dimensions	2400 mm x 1200 mm (2.88 m ²)
Product Thickness	25, 30, 40, 50, 60, 70, 80, 90, 100 mm

Product R-value

Product Thickness	Product R-value
25 mm	R1.10
30 mm	R1.30
40 mm	R1.75
50 mm	R2.35
60 mm	R2.80
70 mm	R3.30
80 mm	R3.75
90 mm	R4.20
100 mm	R4.70

Declared Product R-value at 15°C as per AS/NZS 4859.1:2018

Scope of Use

Kooltherm K12 Framing Board is a high performance rigid thermoset phenolic insulation for wall applications. It has a fibre-free core and a highly reflective aluminium foil on both sides autohesively bonded to the insulation core during manufacture. Kooltherm K12 Framing Board improves the thermal resistance of a cavity adjacent to the board.

- Suitable for timber and steel frame construction.
- Suitable for concrete and block wall construction.

Product Performance

Construction R-values for various thicknesses of Kooltherm K12 Framing Board on Concrete (150mm) & Block Wall (140mm) Construction (See Figures 1 & 2.)		
Product Thickness	Heat Flow In	Heat Flow Out
30 mm	1.90	1.90
40 mm	2.30	2.40
50 mm	2.80	2.90
60 mm	3.20	3.40
70 mm	3.60	3.80

The R-values shown are construction R-values for the building element as required by the Energy Efficiency requirements of the New Zealand Building Code, calculated in accordance with AS/NZS 4859.1:2018 & NZS 4214.

Kooltherm products are manufactured, tested and packaged in conformance with AS/NZS 4859.1:2018.

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Product Performance Data

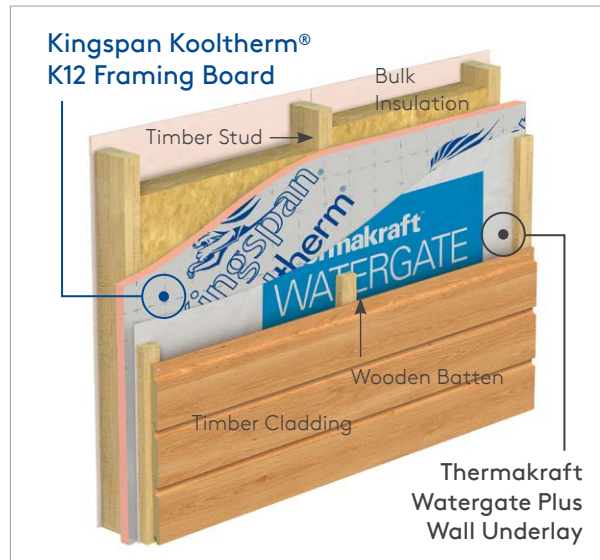


Figure 3. Timber Frame External Insulation Construction



Figure 4. Timber Frame Construction with Insulation between Studs.

Product Performance

Construction R-values for various thicknesses of Kooltherm K12 Framing Board on Timber Frame External Insulation Construction (see Figure 3.)		
Product Thickness	Heat Flow In	Heat Flow Out
25 mm	3.1	3.2
30 mm	3.3	3.4
40 mm	3.7	3.9
50 mm	4.2	4.4

Wall system is based on 90 mm thick timber @ 30% framing, R2.8 bulk insulation, 10 mm plasterboard, Watergate Plus wall underlay, Kooltherm in various listed thicknesses, 45 mm cavity and 19 mm wooden weatherboard.

Construction R-values for various thicknesses of Kooltherm K12 Framing Board on Timber Frame External Insulation Construction (see Figure 3.)		
Product Thickness	Heat Flow In	Heat Flow Out
25 mm	2.5	2.6
30 mm	2.7	2.9
40 mm	3.2	3.3
50 mm	3.7	3.8

Wall system is based on 90 mm thick timber @ 30% framing, R1.8 bulk insulation, 10 mm plasterboard, Watergate Plus wall underlay, Kooltherm in various listed thicknesses, 45 mm cavity and 19 mm wooden weatherboard.

Product Performance

Construction R-values for various thicknesses of Kooltherm K12 Framing Board used between Timber Frame Studs (see Figure 4.)		
Product Thickness	Heat Flow In	Heat Flow Out
50 mm	1.6	1.6
60 mm	1.7	1.8
70 mm	1.9	1.9
80 mm	1.9	2.0

Wall system is based on 90 mm thick timber @ 30% framing, 10 mm plasterboard, Watergate Plus wall underlay, Kooltherm in various listed thicknesses, 40 mm cavity and 110 mm thick brick veneer.

General

- NZBC and AS/NZS 4859.1:2018 compliant.
- Kooltherm K12 Framing Board is not subject to a warning or ban under section 26 of the Building Act 2004.
- Specific engineering design details need to be generated by the designer when Kooltherm K12 Framing Board is installed in front of timber or steel frame.
- Resistant to the passage of water vapour.
- Fibre-free, closed cell insulation core.
- Ideal for new build and refurbishment.
- Rodent, mould and fungi resistant.

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Product Performance Data

Specification Guide

Kooltherm K12 Framing Board

The insulation shall be CodeMark-certified Kingspan Kooltherm K12 Framing Board [] mm thick, comprising a CFC/HCFC-free and zero Ozone Depletion Potential (ODP) 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 Limited and shall be installed in accordance with the instructions issued by them.

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

Limitations

- Cannot be permanently exposed to weather elements.
- Not suitable when risk of galvanic corrosion has been identified for the use with galvanised steel.
- Not a component for structural bracing.

Compliance

Kooltherm K12 Framing Board meets the performance requirements of NZBC Clause B1 Structure (B1.3.1, B1.3.2, B1.3.3(a), B1.3.4), Clauses B2 Durability (B2.3.1 (a) 50 years, Clause E3 Internal Moisture (contributes to E3.3.1), Clause F2 Hazardous Building Materials (F2.3.1), and Clause H1 Energy Efficiency (contributes to H1.3.1 and H1.3.2E) by testing and comparison with acceptable solutions H1/AS1 and H1/AS2 and verification methods H1/VM1 and H1/VM2 providing:

- It is not damaged, dented or fractured.
- It is installed in accordance with installation instructions.
- It is installed by or under guidance of Licensed Building Practitioners.

Standards and Approvals

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	Health and Safety Management
ISO 50001:2018	Energy Management

Product Testing

Characteristic	Standard	Result
Compressive Stress	AS 2498.3	Typically exceeds 100 kPa at 10% compression
Water Vapour Resistance	AS 2498.5-1993 Method 5	> 35 MN.s/g

Fire Performance

Test	Test Method	Result
Ignitability, Flame spread Heat release, Smoke release	AS 1530.3	Spread of Flame Index: 0 Smoke Development ≤ 3
Flame Propagation (AS 1366)	AS 2122.1	Complies

Durability

If correctly installed, Kingspan Kooltherm products can be expected to have a long life of service. Their durability depends on the supporting structure and the conditions of 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.co.nz

Environmental Data

Aspect	Characteristic
Recyclability	Non-contaminated insulation site waste is recyclable, but there are currently no facilities in New Zealand 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



Product Warranty

Standard Kingspan Insulation Warranty applies. Refer to Kingspan Insulation Warranty statement for further details. This is available online at kingspaninsulation.co.nz; or call us on 0800 806 595; or email info@kingspaninsulation.co.nz

Kingspan Insulation NZ Limited (NZBN 9429045930393), reserves the right to amend product specifications without prior notice. The information contained in Kingspan's literature is given in good faith and based on good building practice but are not an exhaustive statement of all relevant information and are subject to any conditions contained in the Warranty. Recommendations for use should be verified as to the suitability and compliance with actual requirements, specifications and any applicable laws and regulations. All product dimensions and performance claims are subject to any variation caused by normal manufacturing process and tolerances.

Furthermore, as the successful performance of the relevant system depends on numerous factors outside the control of Kingspan (for example quality of workmanship and design), Kingspan shall not be liable for the recommendations in that literature and the performance of the Product. 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 E&OE

