

# MBS

Architectural

## Kingspan Kooltherm K5 Insulation INSTALLATION GUIDE

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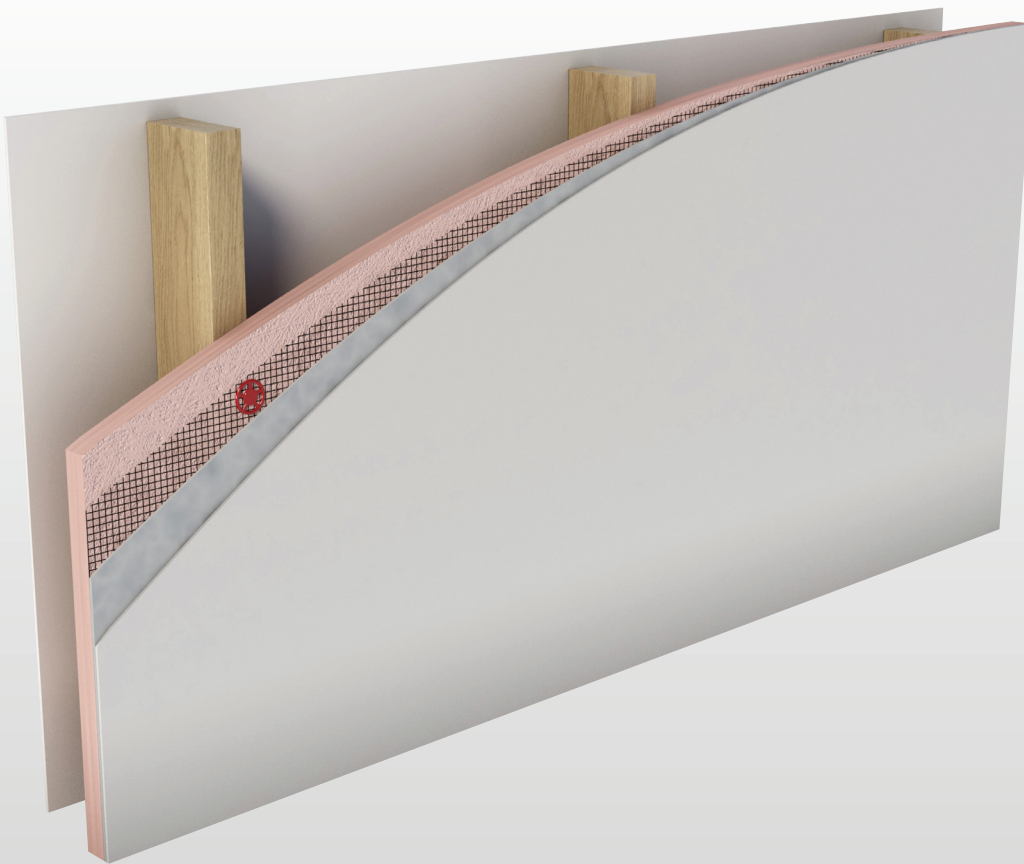
MBS Architectural can supply any of the products featured in this brochure, and be your one point of contact throughout the project lifecycle - from design conception to installation on site.

Reach out to get your hands on product samples, or discuss your project in more detail - **03 9580 7800 / [hello@mbsarchitectural.com.au](mailto:hello@mbsarchitectural.com.au)**



# Kooltherm® K5 External Wall Board

INSULATION FOR USE BEHIND TRADITIONAL AND LIGHTWEIGHT POLYMER MODIFIED RENDERS



- Super high performance rigid thermoset phenolic insulation
- Fibre-free, closed cell insulation core
- Suitable for use behind traditional and lightweight polymer modified renders
- Transforms and upgrades the appearance of existing buildings
- Resistant to the passage of water vapour
- Easy to handle and install
- Ideal for new build and refurbishment
- No CFC or HCFC used in manufacture
- Has zero ODP and low GWP
- Compliant with AS/NZS 4859.1:2018
- Made in Australia



Low Energy –  
Low Carbon Buildings

# Typical Constructions and Total R-values

## Insulated Render System on Concrete Wall

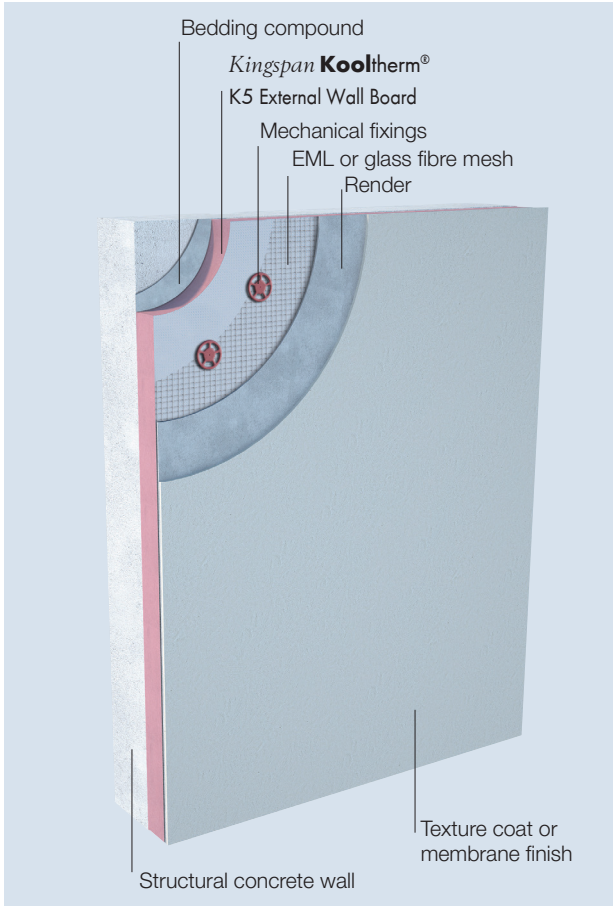


Figure 1

## Insulated Render System on Masonry Block Wall

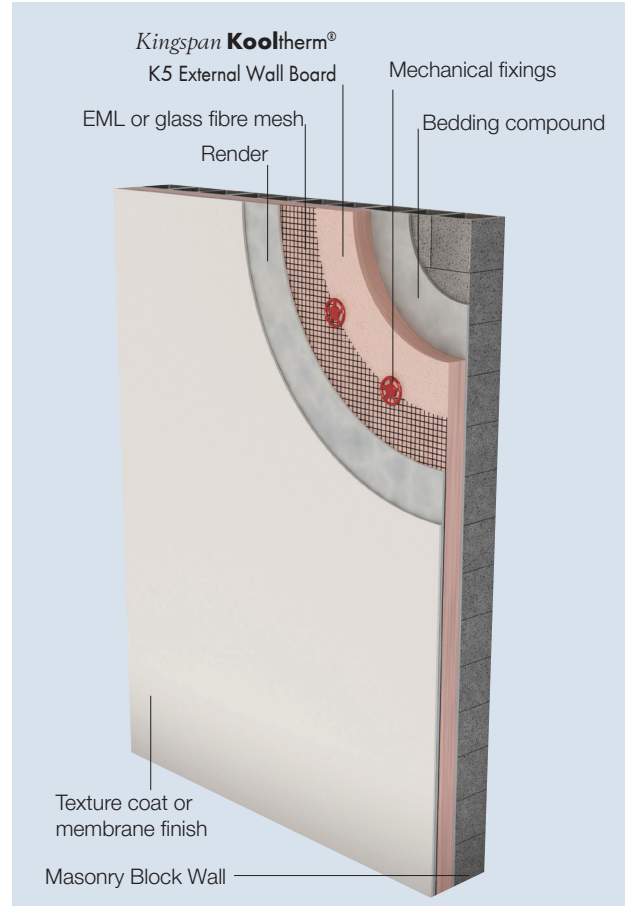


Figure 2

## Thermal Performance

NCC 2019 prescribes different methods to determine Total R-value Calculations for Volume 1 and Volume 2.

Total R-values for various thicknesses of *Kingspan Kooltherm*® K5 External Wall Board applicable for NCC Volume One, Class 2 to 9 buildings & NCC Volume Two, Class 1 & 10a buildings.

Product Thickness (mm)	Heat flow in	Heat flow out
50	R <sub>T</sub> 2.6	R <sub>T</sub> 2.8
80	R <sub>T</sub> 4.0	R <sub>T</sub> 4.2

### Assumptions

The R-values shown are Total R-values for the building element as required by the Energy Provisions of the National Construction Code, calculated in accordance with AS/NZS 4859.2 2018 & NZS 4214.

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

Total R-values for various thicknesses of *Kingspan Kooltherm*® K5 External Wall Board applicable for NCC Volume One, Class 2 to 9 buildings & NCC Volume Two, Class 1 & 10a buildings.

Product Thickness (mm)	Heat flow in	Heat flow out
50	R <sub>T</sub> 2.7	R <sub>T</sub> 2.8
80	R <sub>T</sub> 4.1	R <sub>T</sub> 4.3

### Fire Resistance

Examples shown are suitable for NCC Class 1 & 10a housing and Fire-Resisting Construction Type C walls in NCC Class 2 – 9 buildings. For Fire-Resisting Construction Type A & B walls in NCC Class 2 – 9 buildings a Performance Solution is required. Please contact Kingspan Insulation Technical Services on 1300 247 235 or email [technical@kingspaninsulation.com.au](mailto:technical@kingspaninsulation.com.au) for further guidance.

## Insulated Render System on Steel-framed Wall

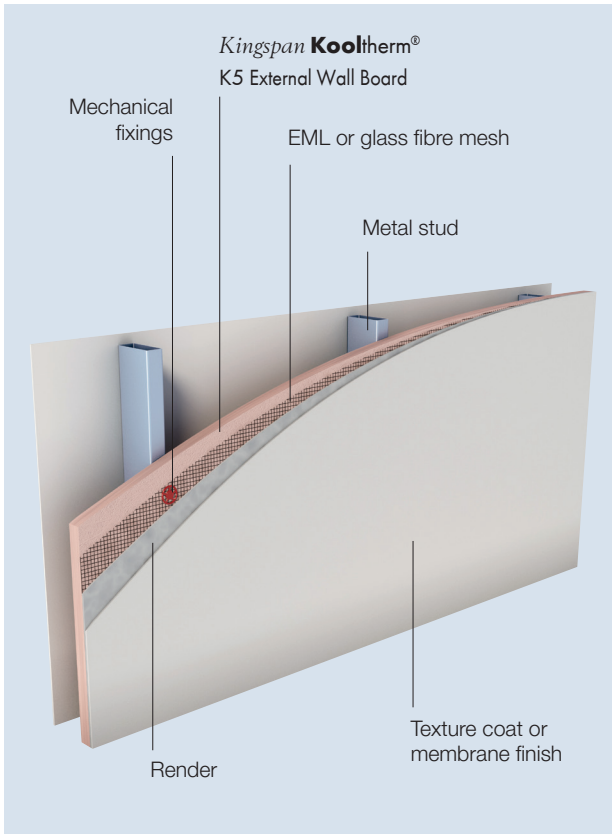


Figure 3

## Insulated Render System on Timber-framed Wall

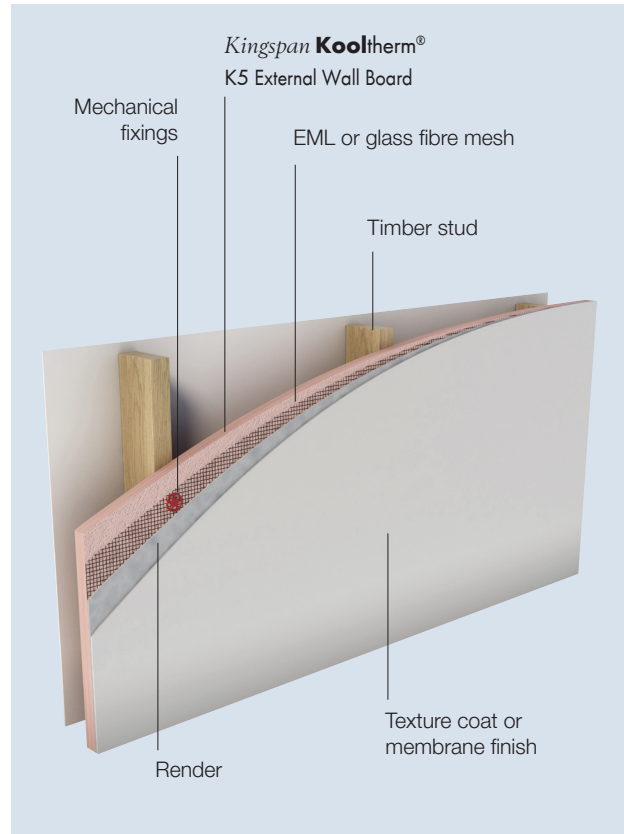


Figure 4

Total R-values for various thicknesses of *Kingspan Kooltherm*<sup>®</sup> K5 External Wall Board applicable for NCC Volume One, Class 2 to 9 buildings & NCC Volume Two, Class 1 & 10a buildings.

Product Thickness (mm)	Heat flow in	Heat flow out
50	R <sub>T</sub> 2.8	R <sub>T</sub> 2.9
80	R <sub>T</sub> 4.2	R <sub>T</sub> 4.4

Total R-values for various thicknesses of *Kingspan Kooltherm*<sup>®</sup> K5 External Wall Board applicable for NCC Volume One, Class 2 to 9 buildings & NCC Volume Two, Class 1 & 10a buildings.

Product Thickness (mm)	Heat flow in	Heat flow out
50	R <sub>T</sub> 2.8	R <sub>T</sub> 2.9
80	R <sub>T</sub> 4.2	R <sub>T</sub> 4.4

### Assumptions

The R-values shown are Total R-values for the building element as required by the Energy Provisions of the National Construction Code, calculated in accordance with AS/NZS 4859.2 2018 & NZS 4214.

*Kingspan Kooltherm*<sup>®</sup> products are manufactured, tested and packaged in conformance with AS/NZS 4859.1:2018.

### Fire Resistance

Examples shown are suitable for NCC Class 1 & 10a housing and Fire-Resisting Construction Type C walls in NCC Class 2 – 9 buildings. For Fire-Resisting Construction Type A & B walls in NCC Class 2 – 9 buildings a Performance Solution is required. Please contact Kingspan Insulation Technical Services on 1300 247 235 or email [technical@kingspaninsulation.com.au](mailto:technical@kingspaninsulation.com.au) for further guidance.

# Product Details

## Product Description

*Kingspan Kooltherm*<sup>®</sup> K5 External Wall Board is a super high performance, fibre-free rigid thermoset, closed cell phenolic insulation core, sandwiched between two layers of tissue based facing autohesively bonded to the insulation core during manufacture.



*Kingspan Kooltherm*<sup>®</sup> K5 External Wall Board is manufactured without the use of CFCs/HCFCs and has zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP).



Product Data	
Declared Thermal Conductivity ( $\lambda$ -value)	0.021 W/m.K at 23°C (Insulant thickness $\geq$ 45 mm)
Product Dimensions	2400 mm x 1200 mm (2.88 m <sup>2</sup> )
Nominal Product Thickness	50, 80 mm <i>Other thicknesses available upon enquiry. Minimum order quantities apply</i>

## Product R-value

Nominal Product Thickness	Declared Product R-value at 23°C
50 mm	R2.35
80 mm	R3.80

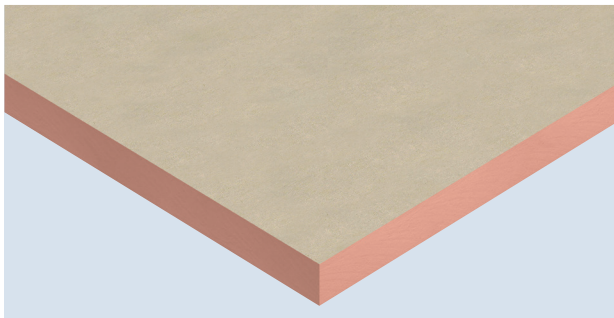


Figure 5 Super high performance *Kingspan Kooltherm*<sup>®</sup> K5 External Wall Board

## Renderers

The chosen render system must be pre-trialed and tested to ensure compatibility with the *Kingspan Kooltherm*<sup>®</sup> K5 External Wall Board. It is recommended that polymer modified renders be used for flexibility and adhesion, and that total render coating be at least 6 mm thick for system integrity.

## Specification Guide

The external wall insulation shall be *Kingspan Kooltherm*<sup>®</sup> K5 External Wall Board \_\_\_ mm thick, with a tested smoke obscuration of not more than 100 m<sup>2</sup>/kg, comprising a CFC/HCFC-free and zero Ozone Depletion Potential (ODP) rigid thermoset phenolic insulation core with a tissue based facing on both sides manufactured under a management system certified to ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 and ISO 50001:2011 by Kingspan Insulation Pty Ltd and shall be installed by approved installers (please contact Kingspan Insulation).

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

## Standards and Approvals

*Kingspan Kooltherm*<sup>®</sup> K5 External Wall 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
OHSAS 18001:2007	Health and Safety Management
ISO 50001:2011	Energy Management

## Product Testing

Characteristic	Standard	Result
Compressive Stress	AS 2498.3	Typically exceeds 120 kPa at 10% compression
Water Vapour Resistance	BS EN 12086:1997 / I.S. EN 12086:1998	> 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 $\leq$ 3

# Installation Instructions

## Durability

If correctly applied, *Kingspan Kooltherm*<sup>®</sup> 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*<sup>®</sup> products are warranted for a period of 10 years for both residential and commercial installations.\*

\* Subject to the terms of the complete *Kingspan Kooltherm*<sup>®</sup> warranty document which is available upon request or downloadable from [www.kingspaninsulation.com.au](http://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

*Kingspan Kooltherm*<sup>®</sup> K5 External Wall Board should only be installed by approved installers. For more information please call Technical Services on 1300 247 235 or email [technical@kingspaninsulation.com.au](mailto:technical@kingspaninsulation.com.au)

System installation and construction details are available from our EIFS (External Insulation & Finishing System) partner.

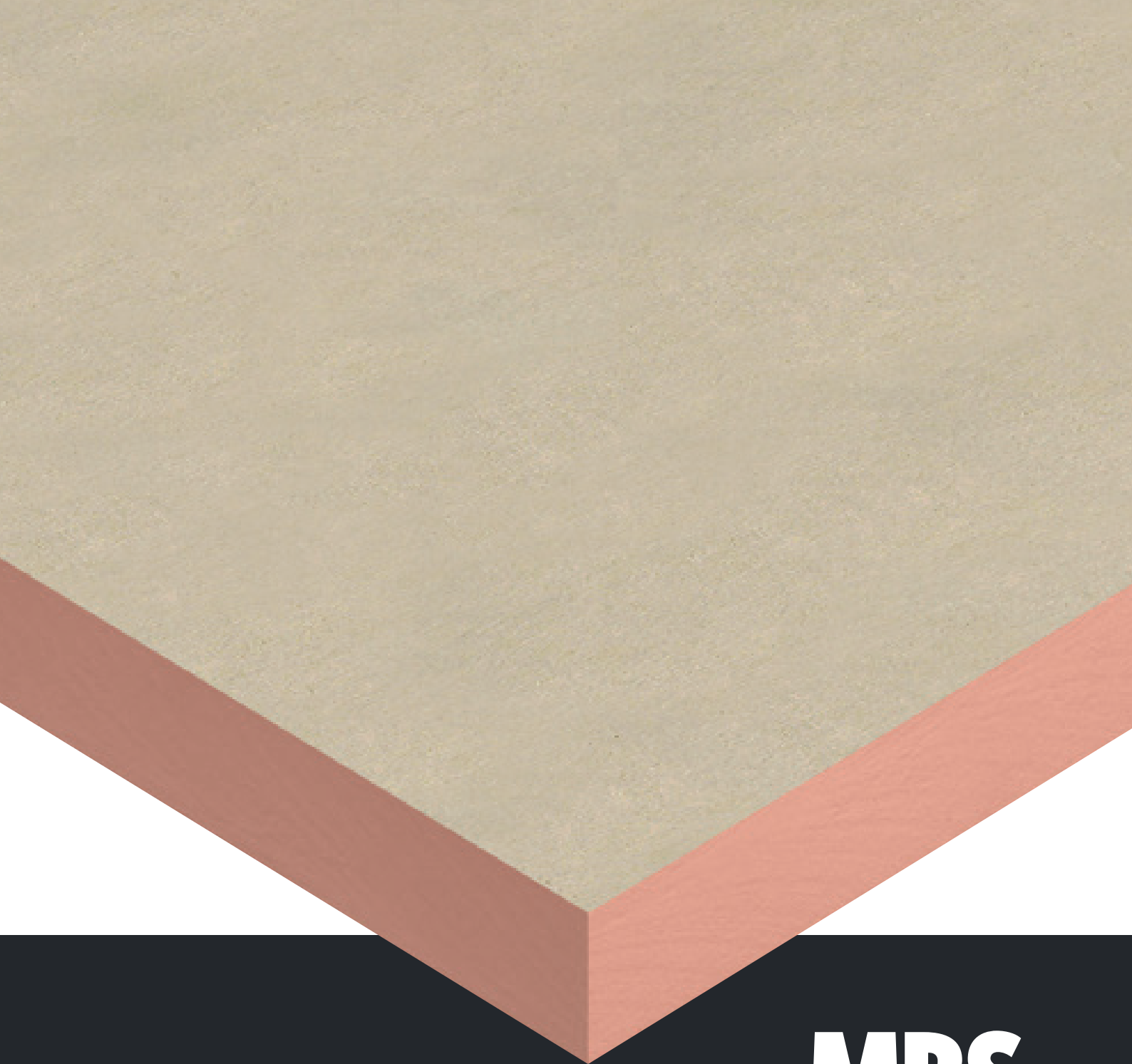
## K-SERIES

## Handling and Storage

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

*Kingspan Kooltherm*<sup>®</sup> K5 External Wall Board should be protected from getting wet during periods of inclement weather prior to the application of the weatherproof render.





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Reach out to our team for support, samples and advice.

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