

# Installation Guide

## Kooltherm<sup>®</sup> K7

### Pitched Roof Board

Roof / Ceiling Insulation



# Kooltherm® K7 Pitched Roof Board

## Product Description

## Kooltherm®

Kooltherm K7 is a roof insulation board used to insulate the rafters of tiled, slated or profiled metal roofs. It is suitable for use in attic floors/ceiling levels, mansard roofs and dormer windows.

Kooltherm K7 is manufactured with a blowing agent that has zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP).

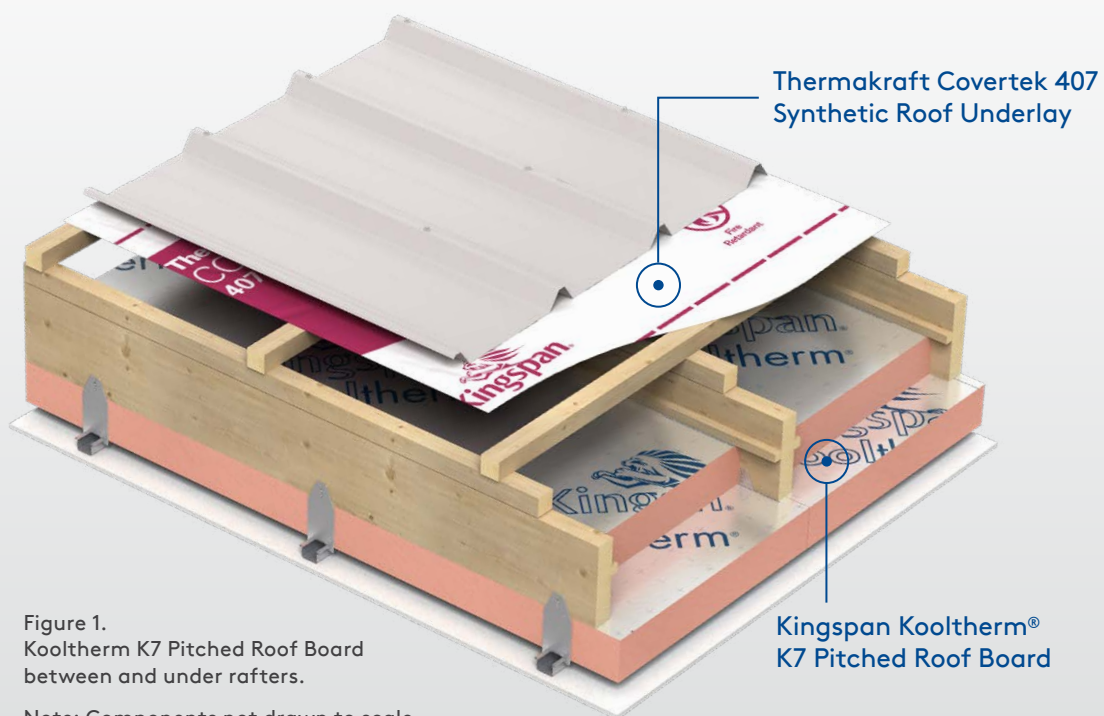


Figure 1.  
Kooltherm K7 Pitched Roof Board  
between and under rafters.

Note: Components not drawn to scale.

- Fibre-free rigid thermoset phenolic insulation core
- Can be used over or under rafters as continuous insulation
- Can eliminate thermal bridging
- Ideal for new build or refurbishment
- Easy to handle and install
- NZBC and AS/NZS 4859.1:2018 compliant

Fibre-free  
Core

# Kooltherm® K7 Pitched Roof Board Installation Instructions

## General Requirements

- 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.
- Kingspan Kooltherm K7 is not intended to provide an internal finish and should be underlined with a suitable building board.
- Ensure accurate trimming to achieve close-butting joints and continuity of insulation.
- Kingspan Insulation products are chemically inert and safe to use.
- The maximum span of Kooltherm K7 is 600mm and beyond this, additional support should be installed.
- Please note that the reflective surfaces on Kooltherm K7 are designed to enhance its thermal performance. As such, they will reflect light as well as heat, including ultraviolet light. Therefore, if this product is being installed during very 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 the bare skin with a UV block sun cream.
- The reflective facings used on Kooltherm K7 can be slippery underfoot when wet. Therefore, it is recommended that any excess material should be contained to avoid a slip hazard.
- **WARNING** – Do NOT stand on or otherwise support your body weight on Kooltherm K7 unless it is fully supported by a load bearing surface. Kooltherm K7 will NOT provide fall arrest protection.
- Ensure all New Zealand health and safety guidelines are followed when working at height.

## Kooltherm K7 Over Rafters

- The maximum span of Kooltherm K7 is 600mm.
- Kingspan Kooltherm K7 may be laid across or down the line of the rafters and should be laid lightly butted.
- All board joints running from eaves to ridge must occur over rafters.
- Ensure continuity of insulation at the ridge of the roof (i.e. Kooltherm K7 sheets should meet and butting joint at the ridge).
- Temporary mechanical fasteners may be used to hold the Kooltherm K7 down to the rafters prior to the installation of battens/purlins. Temporary fixings shall be long enough to fix through the insulation board and be used in conjunction with a washer approximately 40mm diameter to spread fastening load on the Kooltherm K7 surface. Care should be taken not to overdrive mechanical fasteners. Generally, a minimum of 6 mechanical fasteners is required for a sheet of Kooltherm K7 2400mm x 1200mm.
- To reduce air infiltration, tape the Kooltherm K7 joints with Kingspan AIR-CELL Insulation Tape, Kingspan Thermakraft Premium Joining Tape or Thermaflash.
- Use appropriate mechanical fasteners to install counter battens on top of the Kooltherm K7 and ensure that a

minimum of 25mm air gap is achieved between the roof underlay and Kooltherm K7. Mechanical fasteners should be long enough to fix through the counter-battens, Kooltherm K7 and provide min 30mm embedment for screws into timber rafters and three thread engagement for screws into steel rafters.

- The counter batten spacings and fixings need to be calculated from the building's specific wind load and roofing material.

## Kooltherm K7 Between Rafters

- Measure the distance between the rafters before cutting the boards as spacings can vary.
- Ensure that insulation boards are lightly butted and that there is a tight fit between the insulation and the rafters
- Fill all gaps with expanding foam. The installer must check the expanding foam's compatibility with Kooltherm K7 before mass apply.

## Between Rafter Kooltherm K7 Partially Filled Flush to the Top Surface of Rafters

- If Kingspan Kooltherm K7 is to be installed between and over rafters, the between rafter layer must be installed flush with the top of the rafter to prevent the risk of air movement between the two layers of insulation boards.
- If the between rafter layer of insulation is to be fitted from the outside, install the insulation with the use of treated timber 'stop' battens to ensure the Kooltherm K7 is installed flush to the top of the rafter.
- Cut Kooltherm K7 to suit rafter spacings and push the insulation into position (between the rafters). Friction fit is required when insulating between rafters.

## Between Rafter Insulation, Partially Filled Flush to the Bottom Surface of Rafters

- Where the Kingspan Kooltherm K7 is to be installed flush with the bottom of the rafter, but does not fill the rafter depth, Kooltherm K7 between rafters must be flush with the bottom of the rafters to prevent the risk of air movement between the boards and the ceiling.
- Install treated timber stop battens fixed to the side of the rafters to provide a 'stop' above the insulation to ensure the Kooltherm K7 is installed flush to the bottom of the rafter.
- Cut Kooltherm K7 to suit rafter spacings. Friction fit is required when insulating between rafters.
- Counter battens are optional when Kooltherm K7 does not fill the rafter. However, ensure that a minimum of 25mm air gap is achieved between the roof underlay and Kooltherm K7.

## Between Rafter Insulation, Fully Filling the Depth of the Rafters

- Where the insulation between rafters fully fills the rafter depth, simply install the correct thickness of insulation, cut to suit rafter spacings, flush with the bottom and top of the rafters.

# Kooltherm® K7 Pitched Roof Board Installation Instructions

## Between Joist Insulation

- Kingspan Kooltherm K7 installed between joists must be flush with the bottom of the joists in order to prevent the risk of air movement between the boards and the ceiling.
- Install Kooltherm K7, cut to suit rafter spacings, flush with the bottom of the joists.
- Kooltherm K7 must not be used as a weight bearing surface. If the thickness of insulation exceeds the depth of the joists, batten out the joists such that they stand proud of the insulation, so the battened joist provides a weight bearing surface for possible traffic.
- Where there is no over joist insulation, and the attic is to be used for storage, a minimum 9 mm plywood or OSB sheathing board should be mechanically fixed over the joists. Where pedestrian access is required, a minimum 17 mm plywood or OSB should be installed instead.

## Kooltherm K7 Under Rafters

- Kooltherm K7 should be placed with long edge running under the rafters or plasterboard direct fix ceiling system (e.g. clip and furring channel system).
- When a plasterboard direct fix ceiling system is used, fix the clips onto the rafters as per the system manufacturer's instructions. Kooltherm K7 may be pushed through the clips. Ensure the clip is long enough to accommodate the selected Kooltherm K7 thickness.
- Mechanical fasteners should be long enough to fix through the Kooltherm K7 and provide sufficient embedment into the rafter. A minimum of 6 mechanical fasteners is required for a sheet of Kooltherm K7 2400mm x 1200mm and it should be used in conjunction with a approximately 40mm diameter washer to spread fastening load on the Kooltherm K7 surface. Care should be taken not to overdrive mechanical fasteners.
- Where Kooltherm K7 sheet is unsupported by the rafters due to the span distance, nogs should be installed.

## Handling and Storage

### Storage

The polythene packaging of Kooltherm K7 should not be considered adequate for long term outdoor protection. 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.

Kooltherm K7 Pitched Roof Board should be protected from getting wet during periods of inclement weather prior to the application of the weatherproof render.

### 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.

## Occupational Health & Safety

Kingspan Insulation products are chemically inert and safe to use. A Product Safety Information Sheet is available from Kingspan Insulation NZ 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/NZS 3000:2018 Electrical Installations (Wiring Rules).



## Product Warranty

Standard Kingspan Insulation Warranty applies. Refer to Kingspan Insulation Warranty statement for further details. This is available online at [kingspaninsulation.co.nz](http://kingspaninsulation.co.nz); or call us on 0800 806 595; or email [info@kingspaninsulation.co.nz](mailto: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](http://www.kingspaninsulation.co.nz) E&OE

