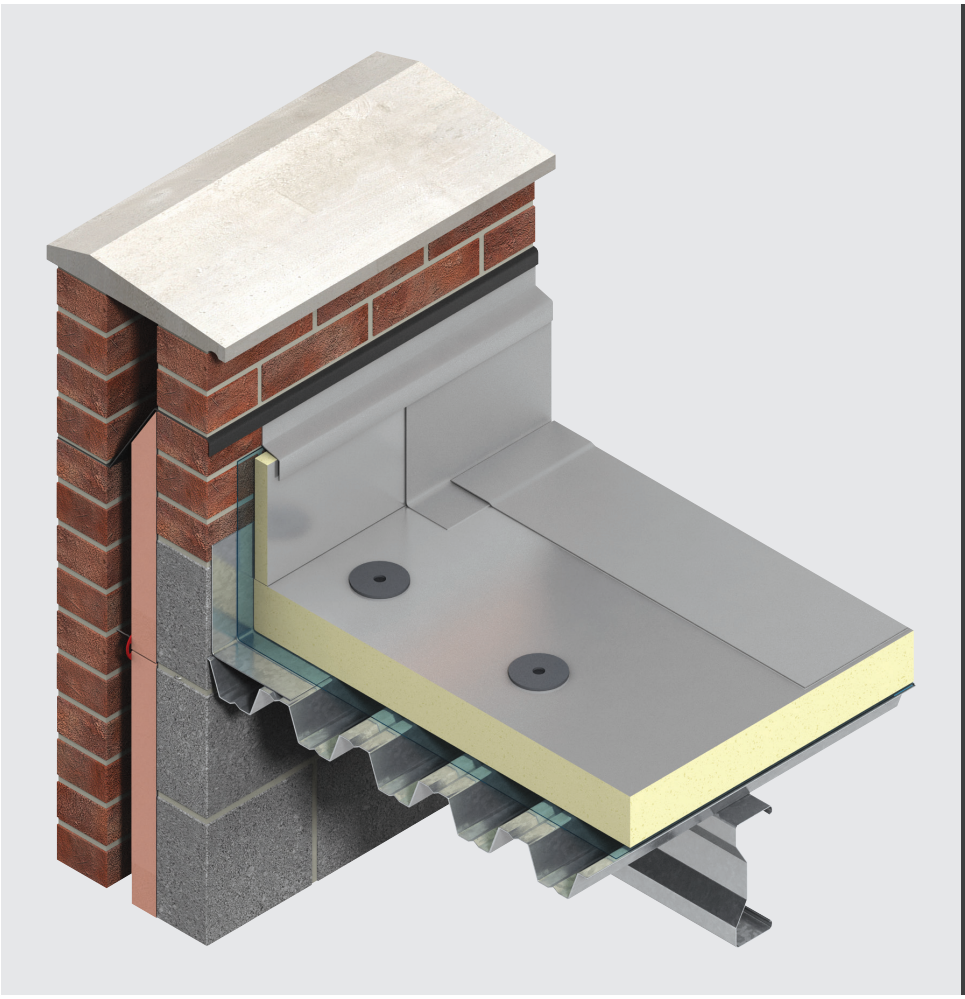
Insulation

Therma™ TR26

Insulation for Flat Roofs Waterproofed with Mechanically Fixed Single-Ply Waterproofing



- Rigid thermoset insulation
- Kingspan Therma™ TR26 is certified to Approval Standard FM 4470 for flat roof solutions
- Compatible with most green roof systems
- Resistant to the passage of water vapour
- Ideal for new build and refurbishment
- Fully compatible with most mechanically fixed single-ply waterproofing systems
- Installation technique is ideal for fast track building programmes
- NCC and AS/NZS 4859.1:2018 compliant

Fibre-free Core

FM APPROVED

Kingspan®

Welcome to Kingspan Insulation

The Kingspan Group

Kingspan Insulation is a division of Kingspan Group plc, a European building materials manufacturer. The Kingspan Group was formed in the late 1960s and is a publicly quoted group of companies headquartered in Kingscourt, County Cavan, Ireland. As a result, Kingspan Insulation can leverage the extensive resources and support of this focused, innovative group.

Kingspan Group operates manufacturing, distribution, and commercial facilities throughout Europe, North America, Australasia, and various other global locations.

About us

Kingspan Insulation is a manufacturer of flexible insulation products and rigid insulation products for building fabric and building services applications. Kingspan Insulation is committed to providing the world market with building products, supported by technical expertise and customer service.

Kingspan Insulation offers a wide product range, including insulation, ductwork, membranes, and safety mesh. The insulation range comprises rigid boards like Kooltherm® phenolic boards, Therma™ PIR boards, rigid extruded polystyrene Kingspan GreenGuard®, and flexible reflective insulation AIR-CELL®.

The extensive range of products is suitable for a variety of applications including:

- pitched roofs;
- flat roofs;
- tapered roofing systems;
- cavity walls;
- solid walls;
- insulated dry lining;
- timber and steel framing;
- externally insulated cladding systems;
- externally insulated render systems;
- floors;
- soffits; and ductwork in building services applications.

Typical Constructions and Total R-values Concrete and Metal Deck

Kingspan Therma™ TR26 in a Dense Concrete Deck with Suspended Ceiling

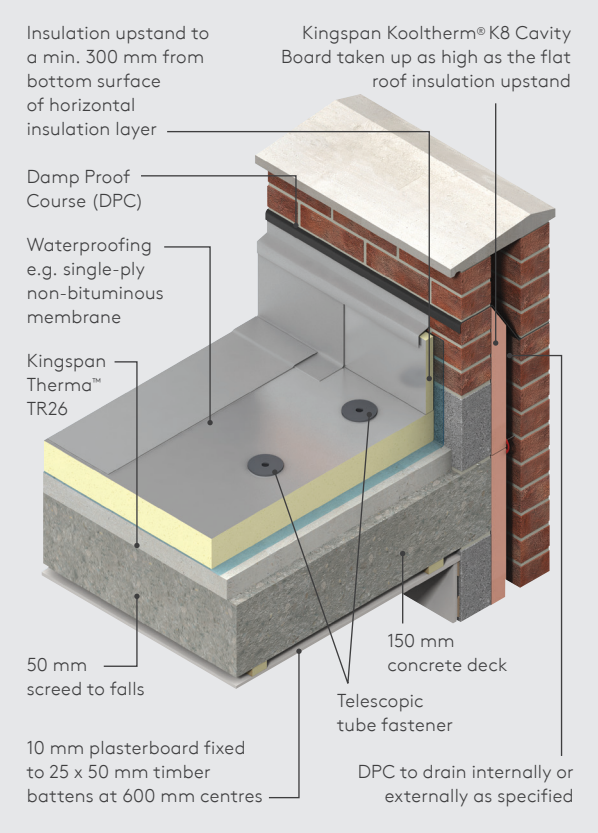


Figure 1. Kingspan Therma™ TR26 in a Dense Concrete Deck with Suspended Ceiling.

Total R-values for various thicknesses of Kingspan Therma™ TR26		
Product Thickness	Heat Flow In	Heat Flow Out
30mm	R_T1.9	R_T2.0
50mm	R_T2.7	R_T2.9
60mm	R_T3.2	R_T3.4
75mm	R_T3.8	R_T4.1
50mm + 50mm	R_T4.9	R_T5.3
60mm + 60mm	R_T5.8	R_T6.2
75mm + 50mm	R_T6.0	R_T6.5
75mm + 75mm	R_T7.1	R_T7.6

Kingspan Therma™ TR26 in a Metal Deck with No Ceiling

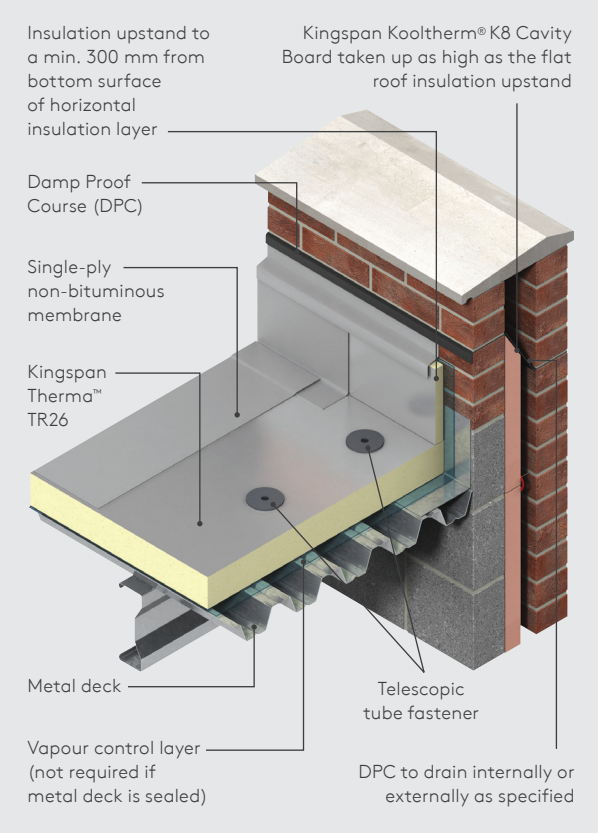


Figure 2. Kingspan Therma™ TR26 in a Metal Deck with No Ceiling.

Total R-values for various thicknesses of Kingspan Therma™ TR26		
Product Thickness	Heat Flow In	Heat Flow Out
30mm	R_T1.5	R_T1.6
50mm	R_T2.4	R_T2.5
60mm	R_T2.8	R_T3.0
75mm	R_T3.4	R_T3.7
50mm + 50mm	R_T4.6	R_T4.9
60mm + 60mm	R_T5.4	R_T5.8
75mm + 50mm	R_T5.6	R_T6.1
75mm + 75mm	R_T6.7	R_T7.2

Typical Constructions and Total R-values Built-up Metal Deck Roof

Kingspan Therma™ TR26 in a Built-up Metal Deck Roof

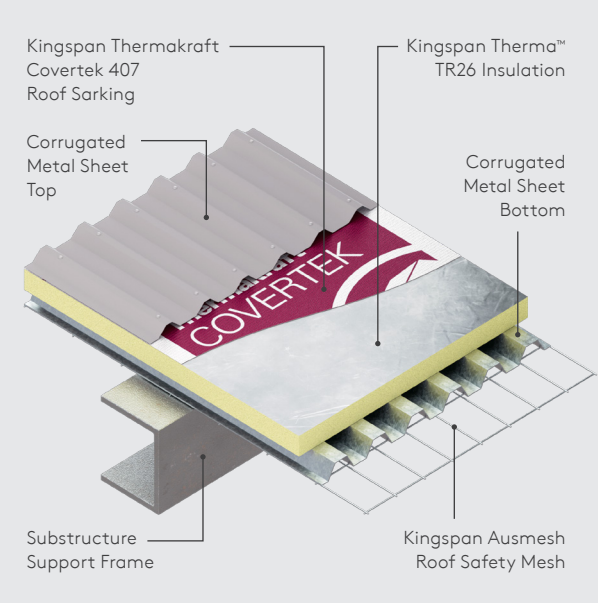


Figure 3. Kingspan Therma™ TR26 in a Built-up Metal Deck Roof.

Total R-values for 80mm Kingspan Therma™ TR26		
Product Thickness	Heat Flow In	Heat Flow Out
80mm	R_T3.7	R_T3.9

Kingspan Therma™ TR26 in a Built-up Metal Deck Roof with Acoustic Board

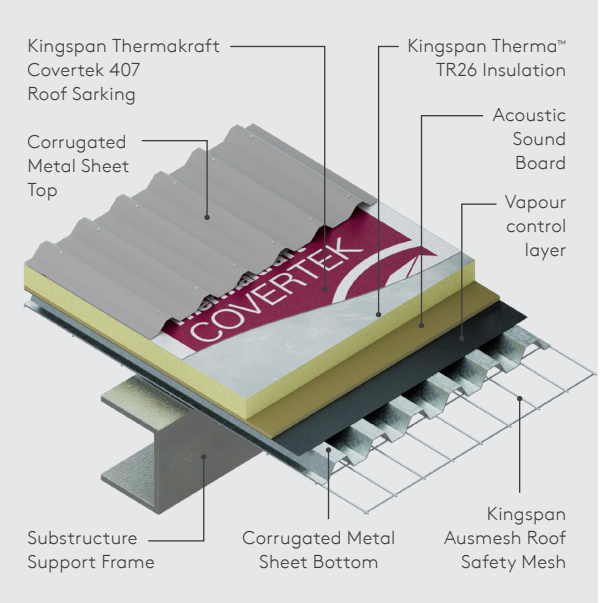


Figure 4. Kingspan Therma™ TR26 in a Built-up Metal Deck Roof with Acoustic Sound Board.

Total R-values for 80mm Kingspan Therma™ TR26		
Product Thickness	Heat Flow In	Heat Flow Out
80mm	R_T3.8	R_T4.0

Typical Constructions and Total R-values Green Roof Systems

Kingspan Therma™ TR26 in an Extensive Green Roof Covering – Metal Deck with No Ceiling

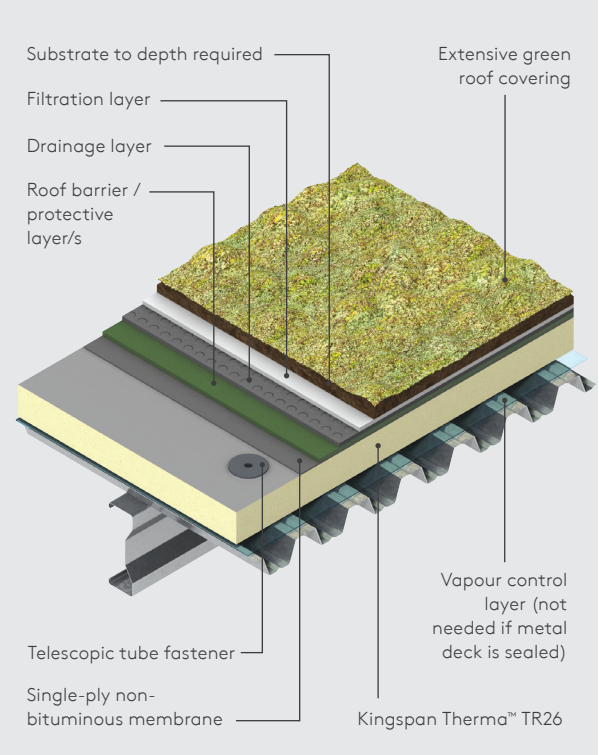


Figure 5. Kingspan Therma™ TR26 in an Extensive Green Roof Covering – Metal Deck with No Ceiling.

Total R-values for various thicknesses of Kingspan Therma™ TR26		
Product Thickness	Heat Flow In	Heat Flow Out
30mm	R_T1.5	R_T1.6
50mm	R_T2.4	R_T2.5
60mm	R_T2.8	R_T3.0
75mm	R_T3.4	R_T3.7
50mm + 50mm	R_T4.6	R_T4.9
60mm + 60mm	R_T5.4	R_T5.8
75mm + 50mm	R_T5.6	R_T6.1
75mm + 75mm	R_T6.7	R_T7.2

Kingspan Therma™ TR26 in a Semi–Intensive Green Roof Covering – Dense Concrete Deck with Suspended Ceiling

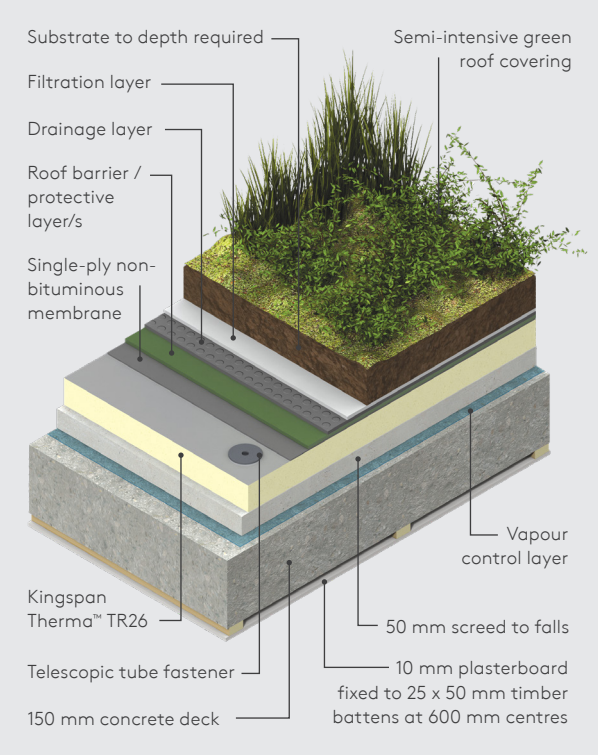


Figure 6. Kingspan Therma™ TR26 in a Semi–Intensive Green Roof Covering – Dense Concrete Deck with Suspended Ceiling

Total R-values for various thicknesses of Kingspan Therma™ TR26		
Product Thickness	Heat Flow In	Heat Flow Out
30mm	R_T1.9	R_T2.0
50mm	R_T2.7	R_T2.9
60mm	R_T3.2	R_T3.4
75mm	R_T3.8	R_T4.1
50mm + 50mm	R_T4.9	R_T5.3
60mm + 60mm	R_T5.8	R_T6.2
75mm + 50mm	R_T6.0	R_T6.5
75mm + 75mm	R_T7.1	R_T7.6

Product Details

Product Description

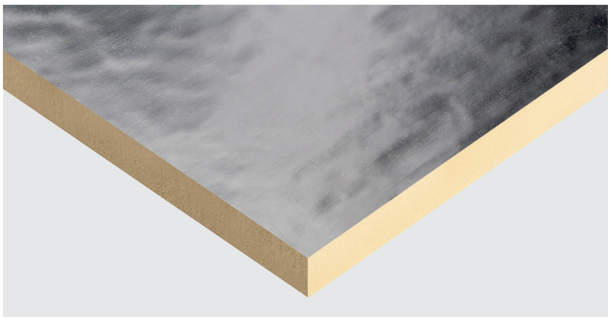


Figure 7. Foil-faced Kingspan Therma™ TR26.

Kingspan Therma™ TR26 is a rigid thermoset insulation with a fibre-free core, faced on both sides with a composite foil autohesively bonded during manufacture.

Product Data	
Thermal Conductivity (ƛ-value) AS/NZS 4859.1:2018	0.022 W/m.K at 23°C Insulant Thickness 50 - 120 mm
Product Dimensions	2400 mm x 1200 mm (2.88 m^2)
Product Thickness	30, 50, 60, 75 mm Other thickness options available on request

Product R-value

Nominal Product Thickness	Declared Product R-value at 23°C
30mm	R1.35
50 mm	R2.30
60 mm	R2.75
75mm	R3.45
80 mm	R3.65
90 mm	R4.10
100 mm	R4.60
110 mm	R5.05
120 mm	R5.50

The ƛ–values and R–values detailed on this page are quoted in accordance with AS/NZS 4859.1:2018. Product R-values are calculated using the calculated $ƛ_{50/90}$, not the declared value.

Specification Guide

Kingspan Therma™ TR26

The roof insulation shall be Kingspan Therma™ TR26 ____ mm thick, comprising a rigid thermoset 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, ISO 50001:2018 and ISO 37301:2021 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.

Tapered Roofing

Kingspan Therma™ TR26 is also available in a tapered version (Kingspan Therma™ TT46) that comes with a supporting design service. This ensures a cost-effective solution for a roof is identified and that the end result is a tapered system design which meets a roof's rainwater run-off and insulation requirements.

Roof Loading/Traffic

Kingspan Therma™ TR26 is suitable for use on access decks subject to limited foot traffic.

Where frequent foot traffic is liable to occur, it is recommended that the roof surface is protected by specially designed walkways, or a trafficable material.

Spanning on Metal Decks

The designer's attention is drawn to the requirement that insulation boards are of the minimum thicknesses shown in the table below, when used over metal decks with trough openings as shown.

Trough Opening	Minimum Insulant Thickness
≤75 mm	25 mm
76 mm – 100 mm	30 mm
101 mm – 125 mm	35 mm
126 mm – 150 mm	40 mm
151 mm – 175 mm	45 mm
176 mm – 200 mm	50 mm
201 mm – 225 mm	55 mm
226 mm – 250 mm	60 mm

Product Details

Standards and Approvals

Kingspan Therma™ TR26 is compliant with AS/NZS 4859.1:2018 as required by the NCC BCA.

Kingspan Therma™ TR26 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
ISO 37301:2021	Compliance Management

Product Testing

Characteristic	Standard	Result
Compressive Stress	AS 2498.3:1993	Exceeds 150 kPa at 10% compression
Water Vapour Resistance	AS 2498.5:1993	> 100 MN.s/g

Fire Performance

Kingspan Therma™ TR26, when subjected to the Australian Standard fire test specified in the table below:

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 Index: 2

FM Approval

Kingspan Therma™ TR26 is certified to Approval Standard FM 4470 for flat roof solutions. Not all thicknesses and sizes are covered by the FM Approval.

Further details of the FM Approval listing for Therma™ TR26 is published on the FM Approvals Approval Guide website at: www.roofnav.com.

To view the listing, search Keyword: Therma™ TR26. Please contact the Kingspan Insulation Technical Services department for further confirmation.

Durability

If correctly applied, Kingspan Therma™ 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 Therma™ products are warranted for a period of 10 years for both residential and commercial installations.*

* Subject to the terms of the complete Kingspan Therma™ warranty document which is available upon request or downloadable from www.kingspaninsulation.com.au

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

Installation Instructions

Installing over Concrete Decks

- Concrete decks should be clean, dry, without large projections, steps or gaps, and should be graded to allow correct falls to all rainwater outlets.
- The vapour control layer should be loose–laid over the deck.
- Where one run of the specified vapour control layer laps another, there should be minimum 150 mm side and end overlaps, which should be adequately sealed.
- Turn up the vapour control layer at the edge of the roof to a height appropriate to the specified waterproofing membrane.
- Boards of Kingspan Therma™ should be secured to the deck using mechanical fixings e.g. telescopic tube fasteners (see 'Mechanical Fixings' on page 9).
- Insulation boards should always be laid break–bonded, either with their long edges at right angles to the edge of, or diagonally across the roof, and with joints lightly butted. There should be no gaps at abutments.
- Roof–light or ventilator kerbs etc. should always insulated with the same thickness of Kingspan Therma™ TR26 as the general roof area.
- A 25 mm thick Kingspan Therma™ TR26 upstand should be used around the perimeter of the roof on the internal façade of parapets to limit thermal bridging.
- A minimum distance of 300 mm should be maintained between the top of the insulation upstand and the bottom of the horizontal roof insulation.
- The waterproofing membrane is also mechanically fixed in accordance with the membrane manufacturer's instructions, over the whole insulated area including any insulation upstands, as soon as possible after laying the insulation boards.

Installing over Metal Decks

- Where an FM approved construction is required, please refer to 'FM Certification' on page 7.
- Metal decks should be clean, dry, without large projections, steps or gaps, and should be graded to allow correct falls to all rainwater outlets.
- If using a sealed metal deck there is no requirement for a separate vapour control layer.
- If the metal deck is not sealed the vapour control layer should be loose–laid.
- Where one run of the specified vapour control layer laps another, there should be minimum 150 mm side and end overlaps, which should be adequately sealed.
- Turn up the vapour control layer at the edge of the roof to a height appropriate to the specified waterproofing membrane.
- Boards of Kingspan Therma™ TR26 should be secured to the deck using mechanical fixings e.g. telescopic tube fasteners (see 'Mechanical Fixings' on page 9).
- Insulation boards should always be laid break–bonded, either with their long edges at right angles to the trough openings, or diagonally across the corrugation line, and with joints lightly butted. There should be no gaps at abutments.
- Roof–light or ventilator kerbs etc. should always insulated with the same thickness of Kingspan Therma™ TR26 as the general roof area.
- A 25 mm thick Kingspan Therma™ TR26 upstand should be used around the perimeter of the roof on the internal façade of parapets to limit thermal bridging.
- A minimum distance of 300 mm should be maintained between the top of the insulation upstand and the bottom of the horizontal roof insulation.
- The waterproofing membrane is also mechanically fixed in accordance with the membrane manufacturer's instructions, over the whole insulated area including any insulation upstands, as soon as possible after laying the insulation boards.

Installing over Existing Flat Roofs

- The existing waterproofing membrane surface should be clean, dry, without large projections, steps or gaps, and should be graded to allow correct falls to all rainwater outlets.
- Where the existing waterproofing membrane is not fit for purpose as a vapour control layer, a separate vapour control layer should be loose–laid over it.
- Where one run of the specified vapour control layer laps another, there should be minimum 150 mm side and end overlaps, which should be adequately sealed.
- Turn up the vapour control layer at the edge of the roof to a height appropriate to the specified new waterproofing membrane.
- Boards of Kingspan Therma™ TR26 should be secured to the deck using mechanical fixings e.g. telescopic tube fasteners (see `Mechanical Fixings' on page 9).
- Insulation boards should always be laid break–bonded, either with their long edges at right angles to the edge of, or diagonally across the roof, and with joints lightly butted. There should be no gaps at abutments.
- Roof–light or ventilator kerbs etc. should always be insulated with the same thickness of Kingspan Therma™ TR26 as the general roof area.
- A 25 mm thick Kingspan Therma™ TR26 upstand should be used around the perimeter of the roof on the internal façade of parapets to limit thermal bridging.
- A minimum distance of 300 mm should be maintained between the top of the insulation upstand and the bottom of the horizontal roof insulation.
- The waterproofing membrane is installed in accordance with the membrane manufacturer's instructions, over the whole insulated area including any insulation upstands, as soon as possible after laying the insulation boards.

Installation Instructions

Mechanical Fixings

- The number of mechanical fixings required to fix Kingspan Therma™ TR26 will vary with the geographical location of the building, the local topography, and the height and width of the roof concerned along with the deck type.
- A minimum of 6 fixings are required to secure boards of Kingspan Therma™ TR26 to the deck (see Figure 8).
- The requirement for additional fixings should be assessed in accordance with appropriate Australian wind load standards.
- Fasteners at insulation board edges must be located > 50 mm and < 150 mm from edges and corners of the board and not overlap board joints.
- Each fixing should incorporate a square or circular plate washer (50 x 50 mm or 50 mm diameter).
- If two layers of insulation are to be installed, the base layer should be mechanically fixed with minimum 1 No. fixing in the centre of the board before fixing the top layer as described above.
- Where alternative mechanical fixing systems are specified, such as bar fixing systems, the specified system must give similar restraint to the insulation board as would be attained by the use of conventional telescopic tube fasteners.

Installing in Two Layers

- In situations where two layers of insulation are required, both layers should be installed in the same manner, as detailed in the preceding sections. However, refer to 'Mechanical Fixings' for guidance on the number of fixings to be used in each layer.
- In all cases, the layers should be horizontally offset relative to each other so that, as far as possible, the board joints in the two adjacent layers do not coincide with each other (see Figure 9).

Figure 8. Fastener pattern (6 No. per board) 2270 x 1200 mm board - 2.2 fixings / m².

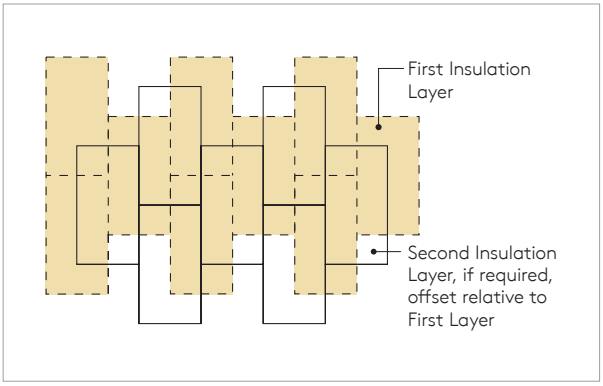


Figure 9. Offsetting of Multiple Insulation Layers.

Other Information

General

Following Trades

The roof must be adequately protected when building works are being carried out on or over the roof surface. This is best achieved by close boarding. The completed roof must not be used for storage of heavy building components such as bricks or air conditioning equipment.

Daily Working Practice

At the completion of each day's work, or whenever work is interrupted for extended periods of time, a night joint must be made in order to prevent water penetration into the roof construction.

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.

Packaging

According to quantity, the boards are supplied in packs, labelled and shrink-wrapped in polythene.

Handling and Storage

Storage

The packaging of Kingspan Therma™ 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).

Contact Details

Australia

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