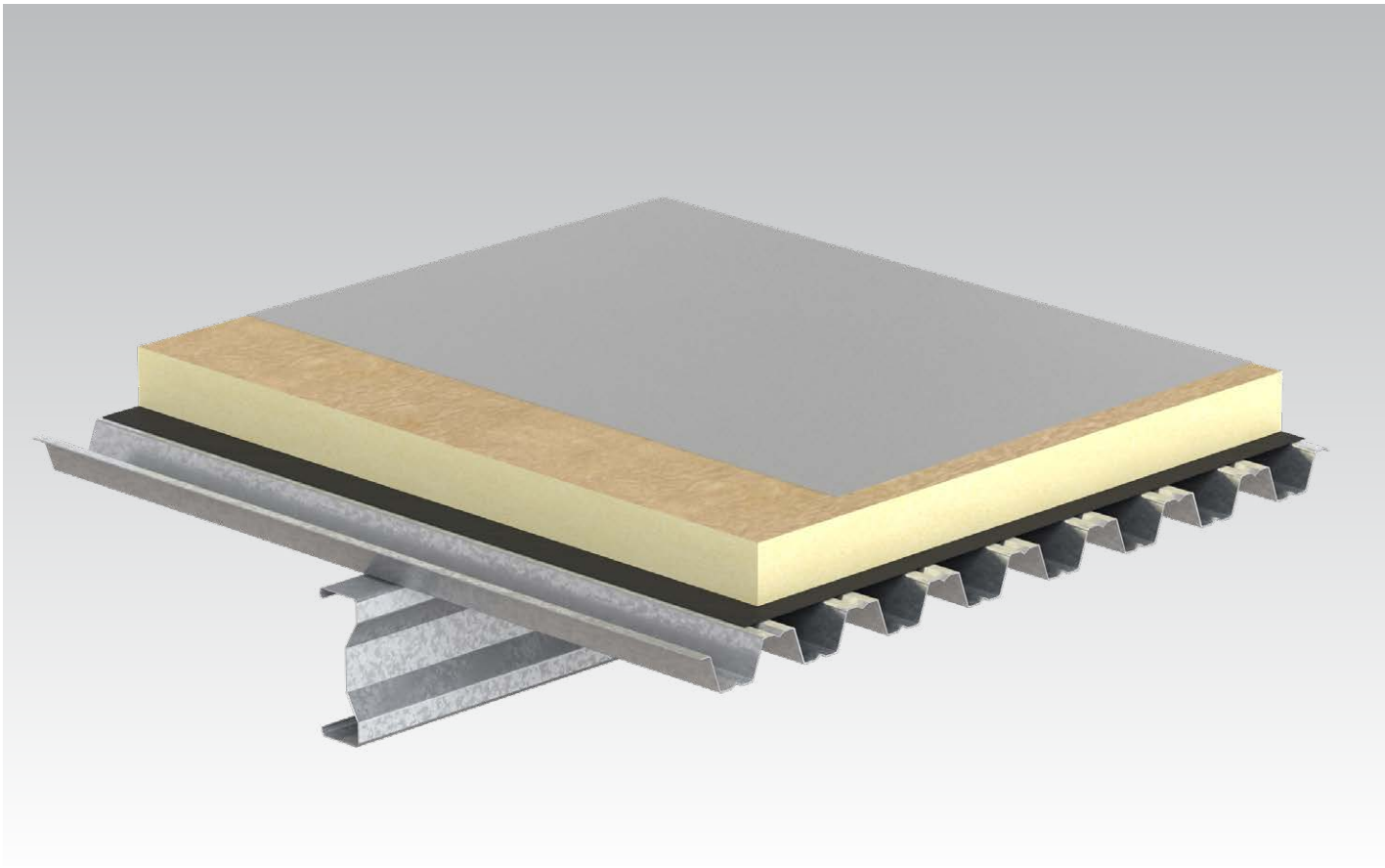
Insulation
New Zealand

Product Data Sheet

Therma™ TR27 Flat Roof Board
Therma™ TT47 Tapered Roof Board

Insulation for Waterproofed Flat Roofs



Therma™

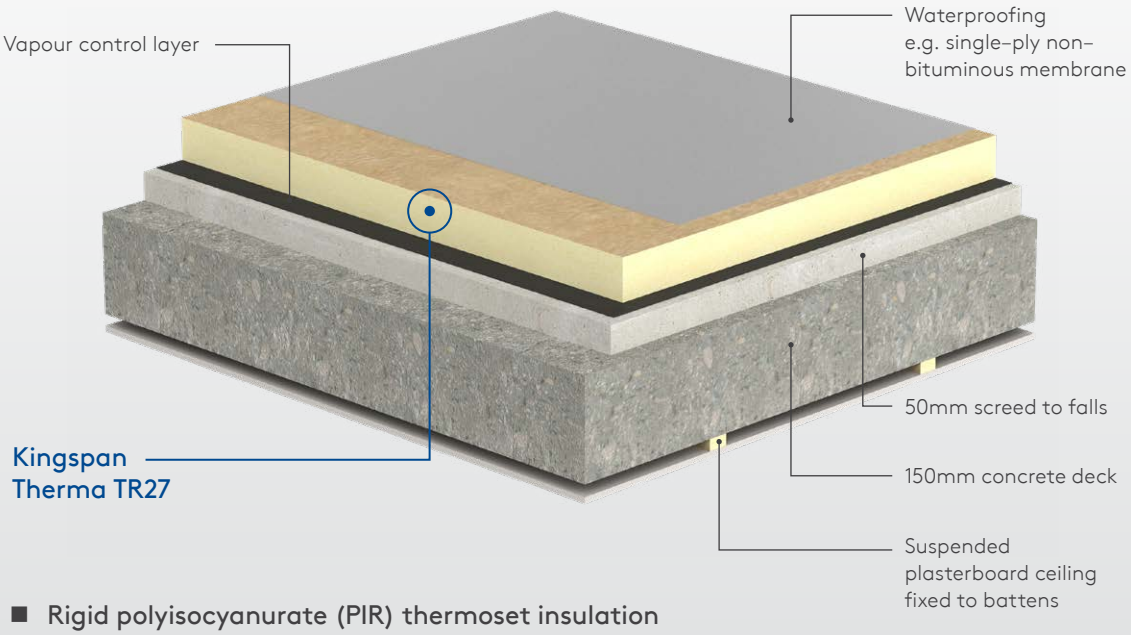
Kingspan®

Therma™ TR27 & Therma™ TT47
Product Description

Therma™

Therma TR27 and Therma TT47 are both fibre-free rigid thermoset insulation, faced on both sides with a coated glass tissue autohesively bonded to the insulation core during manufacture.

Therma TR27 and Therma TT47 are manufactured with a blowing agent that has zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP).



- Rigid polyisocyanurate (PIR) thermoset insulation
- Compatible with most green roof systems
- Easy to handle and install
- Ideal for new build and refurbishment
- Compatible with most single-ply non-bituminous membranes that are fully bonded with solvent based adhesive systems
- Compatible with most bitumen based and mastic asphalt waterproofing systems
- NZBC and AS/NZS 4859.1:2018 compliant

Fibre-free Core

Product Details

Product Description

Figure 1. Coated Glass Tissue-faced Therma TR27.

Therma TR27 and Therma TT47 are fibre-free rigid polyisocyanurate (PIR) thermoset insulation, faced on both sides with a coated glass tissue autohesively bonded to the insulation core during manufacture. Available in flat and tapered boards.

Therma TR27 and Therma TT47 are manufactured with a blowing agent that has zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP).

Product Data	
Thermal Conductivity at 15°C (λ-value) as per AS/NZS 4859.1:2018	0.027 W/mK (insulant thickness < 80 mm)
	0.025 W/mK (insulant thickness 80 -119 mm); and
	0.025 W/mK (insulant thickness ≥120 mm)
Product Dimensions	2270mm x 1200mm (2.72m²) Other sizes are available on request.
Product Thickness	25, 30, 40, 50, 60, 70, 80, 90, 100, 120 and 140 mm

Product R-value

Nominal Product Thickness	Declared Product R-value at 15°C
25mm	0.90
30mm	1.10
40mm	1.50
50mm	1.85
60mm	2.25
70mm	2.65
80mm	3.20
90mm	3.60
100mm	4.00
120mm	4.95
140mm	5.80

The λ–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 $\lambda_{50/90}$, not the declared value.

Scope of Use

Therma TR27 and Therma TT47 are fibre-free rigid thermoset insulation, faced on both sides with a coated glass tissue.

- Suitable for flat roofs
- Suitable for new build and refurbishment
- Suitable for with use with most bitumen based and mastic asphalt waterproofing systems.
- Therma TR27 and Therma TT47 are generally used with proprietary roofing systems. For technical details and installation instructions consult the proprietary roofing system supplier.

Tapered Roofing

Part Number	Description	Board Size (WxL)	Tapered Angle (Degrees)	Origin	Thermal Conductivity at 15°C (λ-value) as per AS/NZS 4859.1:2018
100000009815	TT47 25 25/50mm Insulation Tapered Board	1200 x 1200mm	1.19	Germany	0.028 W/mK
100000009816	TT47 25 50/75mm Insulation Tapered Board	1200 x 1200mm	1.19		
100000009817	TT47 25 75/100mm Insulation Tapered Board	1200 x 1200mm	1.19		
100000077574	TT47 40 30/70mm Insulation Tapered Board (10 sheets/pack)	1195 x 2285mm	1.91*		
100000077575	TT47 40 70/110mm Insulation Tapered Board (4 sheets/pack)	1195 x 2285mm	1.91*		
1000005493050	TT47 20 SP 5-49 30/50mm Insulation Tapered Board (12 boards/pack)	1195 x 2285mm	0.96*	Spain	

* Note: Tapered angle is calculated based on 1200mm width boards. The 1195mm width is the final trimmed product.

Example Constructions

Therma TR27 in a Dense Concrete Deck with Suspended Ceiling

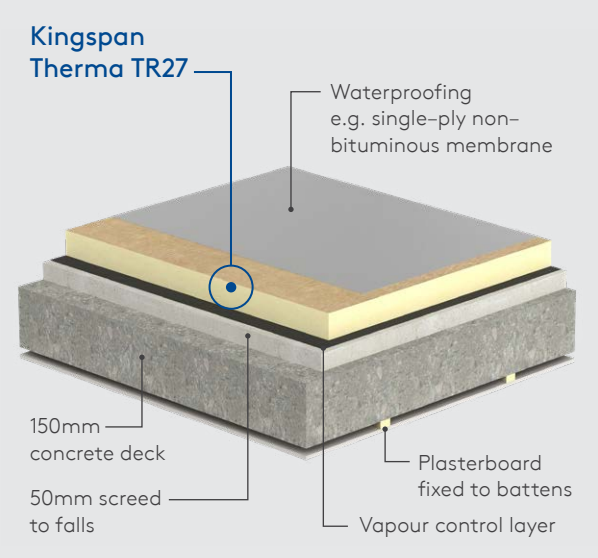


Figure 2. Concrete Deck with Suspended Ceiling.

Therma TR27 in a Timber Deck with Suspended Ceiling

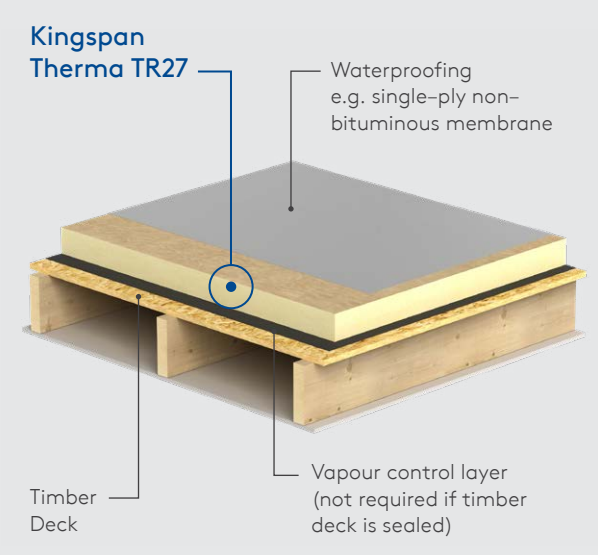


Figure 3. Timber Deck with Suspended Ceiling.

Therma TR27 in a Metal Deck with No Ceiling

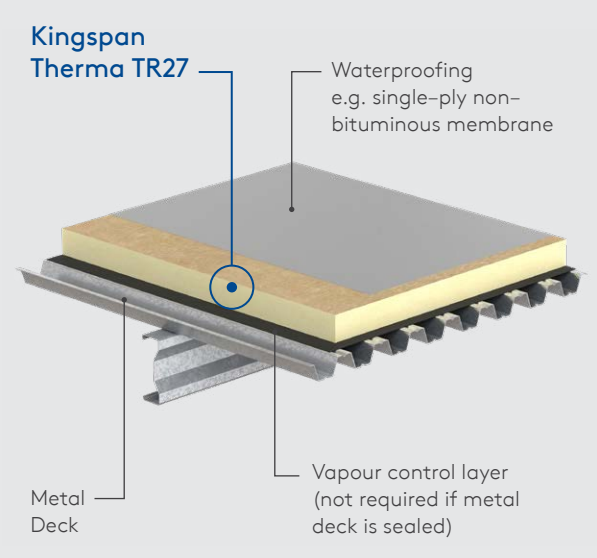


Figure 4. Metal Deck with No Ceiling.

Therma TR27 in a Semi-Intensive Green Roof Covering – Dense Concrete Deck with Suspended Ceiling

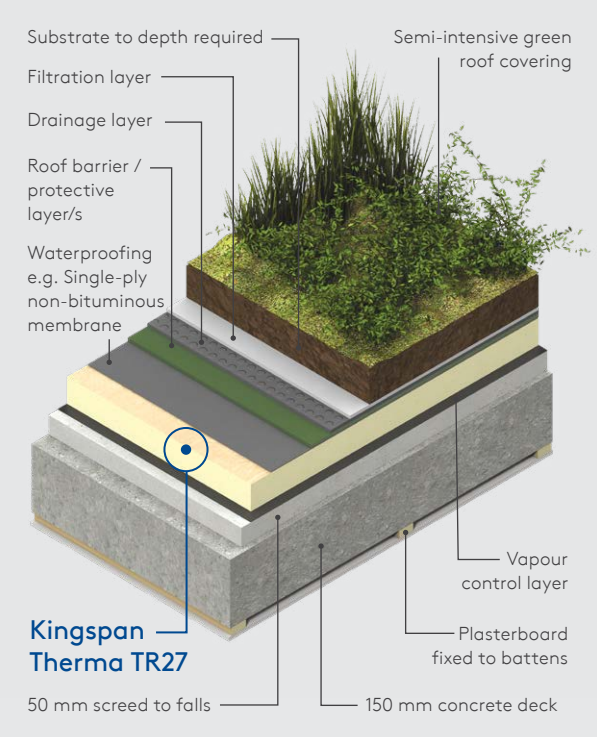


Figure 5. Semi-Intensive Green Roof Covering – Dense Concrete Deck with Suspended Ceiling

Product Details

General

- NZBC and AS/NZS 4859.1:2018 compliant.
- Therma TR27, including tapered board TT47, is not subject to a warning or ban under section 26 of the Building Act 2004.
- Therma TR27, including tapered board TT47, generally does not require regular maintenance, however, damaged, dented, or fractured insulation boards must be replaced.
- Therma TR27 is manufactured in the United Kingdom.

Specification Guide

The roof insulation shall be Therma TR27 ___ mm thick or Therma TT47 as per planned design, comprising a rigid thermoset insulation core with coated glass tissue 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 and shall be installed in accordance with the proprietary system instructions.

Limitations

- Cannot be permanently exposed to weather elements.
- Not a component for structural bracing.
- Not a fall arrest product.
- Therma TR27 and Therma TT47 are 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.
- Synthetic cold bonding adhesive must be tested for compatibility. Refer to the technical details and installation instructions from the proprietary roofing system supplier.

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

Compliance

Therma TR27 and Therma TT47 insulation boards meet 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 relevant proprietary system installation instructions.
- It is installed by or under guidance of Licensed Building Practitioners.

Standards and Approvals

Therma TR27 and Therma TT47 are manufactured to the highest standards and certified under the following management systems:

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

Product Testing

Compressive Stress

Product	Standard	Result
TR27	BS EN 826:2013	≥ 150 kPa at 10% compression
TT47	EN 826:2013	≥ 150 kPa at 10% compression (thickness ≤ 80mm) ≥ 120 kPa at 10% compression (thickness > 80mm)

Fire Performance

Therma TR27 and Therma TT47, when subjected to the fire test specified in the table below, will achieve the result shown:

Standard	Test Method	Result
Flame Propagation AS 1366.2:1992	AS 2122.1:1993	Complies

Durability

When Therma TR27 and Therma TT47 are installed in accordance with the scope of use and the proprietary system guidelines, then they are expected to have a long life of service. Kingspan Therma products are warranted for a period of 10 years for both residential and commercial installations.

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
Blowing Agent	Manufactured with a blowing agent that has zero ODP and low GWP
CFC/HCFC	Product CFC/HCFC Free

Storage and Handling

The packaging of Therma TR27 and Therma TT47 should not be considered adequate for 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 as this may cause delamination of facers.

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 unless compatibility testing has been completed by the proprietary system supplier.

Damaged boards or boards that have been in contact with harsh solvents or acids should NOT be used.

Health and Safety

Kingspan Insulation products are chemically inert and safe to use. A Product Safety Data Sheet is available from Kingspan Insulation NZ Ltd. Ensure all relevant New Zealand health and safety guidelines are followed when using the product.

Warning: Do **NOT** stand on or otherwise support your weight on Therma TR27 or Therma TT47 unless the board is fully supported by a load bearing surface.

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