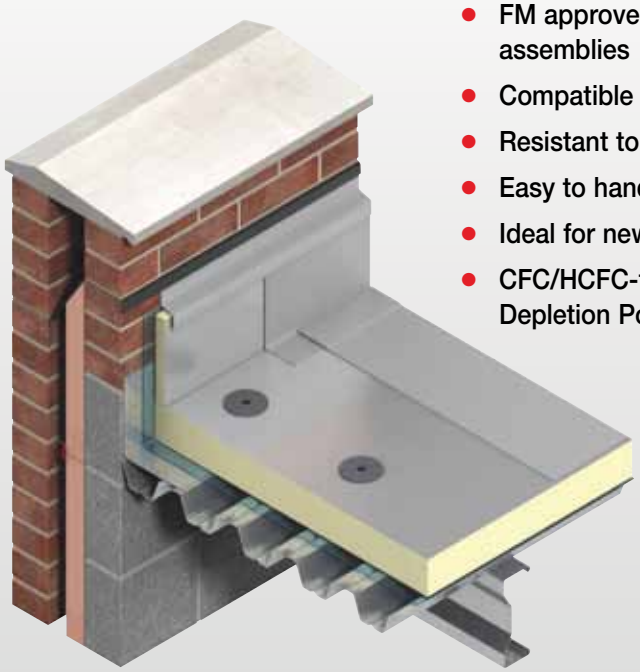
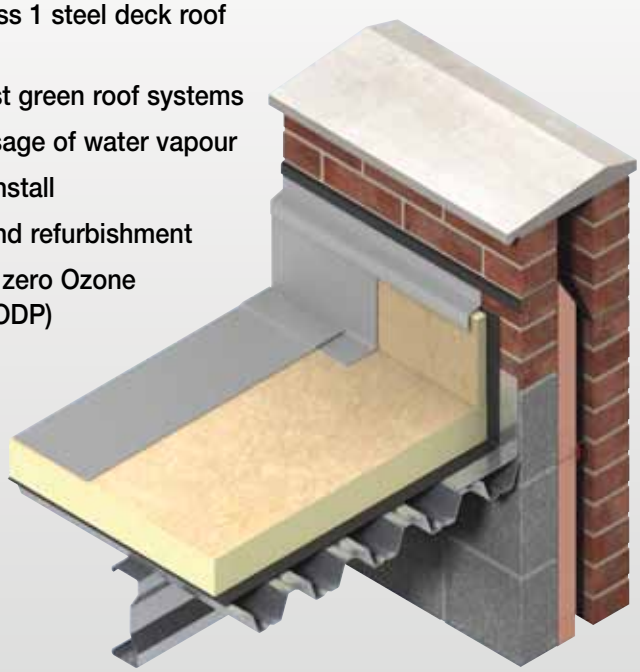
A4/8 | TR26/27 | AW1299
Issue 1 | Jun 2013

Therma™ TR26 LPC/FM / Therma™ TR27 LPC/FM

INSULATION FOR WATERPROOFED FLAT ROOFS

- Super high performance rigid thermoset insulation
- LPCB approved to LPS 1181: Part 1
- FM approved for Class 1 steel deck roof assemblies
- Compatible with most green roof systems
- Resistant to the passage of water vapour
- Easy to handle and install
- Ideal for new build and refurbishment
- CFC/HCFC-free with zero Ozone Depletion Potential (ODP)





- Fully compatible with most mechanically fixed single–ply waterproofing systems
- Installation technique is ideal for fast track building programmes

- Fully compatible with single–ply non–bituminous membranes that are fully bonded with solvent based adhesive systems
- Fully compatible with most bitumen based and mastic asphalt waterproofing systems

LPS 1181: Part 1
Certificate No. 388b/01

Class 1 Roof Construction

zero O.D.P

Kingspan™

Low Energy – Low Carbon Buildings

Typical Constructions

Concrete Deck

Kingspan **Therma**™ TR26 LPC/FM **in a Dense Concrete Deck with Suspended Ceiling**

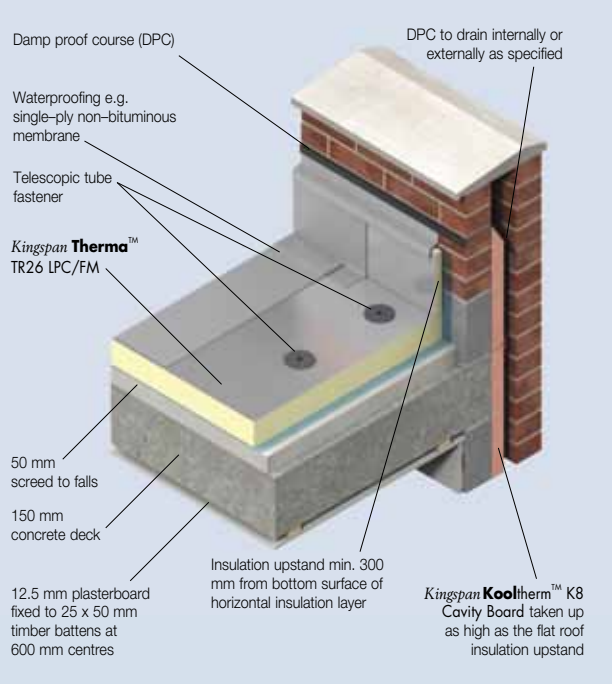


Figure 1

Kingspan **Therma**™ TR27 LPC/FM **in a Dense Concrete Deck with Suspended Ceiling**

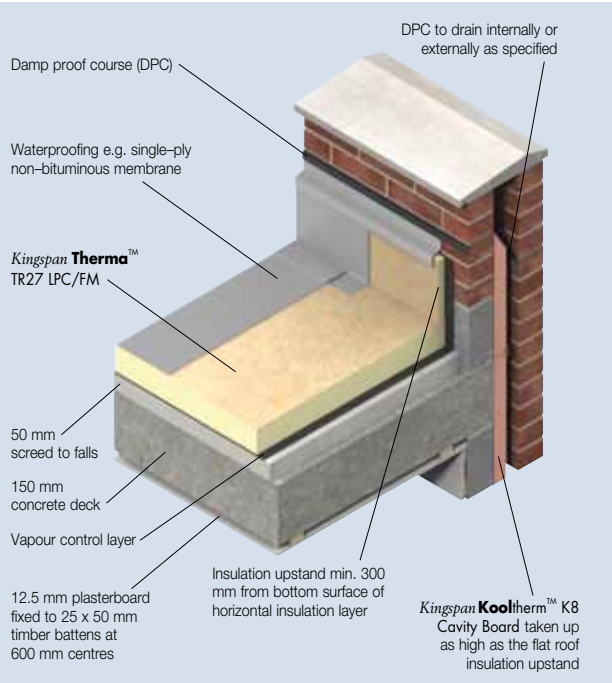


Figure 2

Metal Deck

Kingspan **Therma**™ TR26 LPC/FM **in a Metal Deck with No Ceiling**

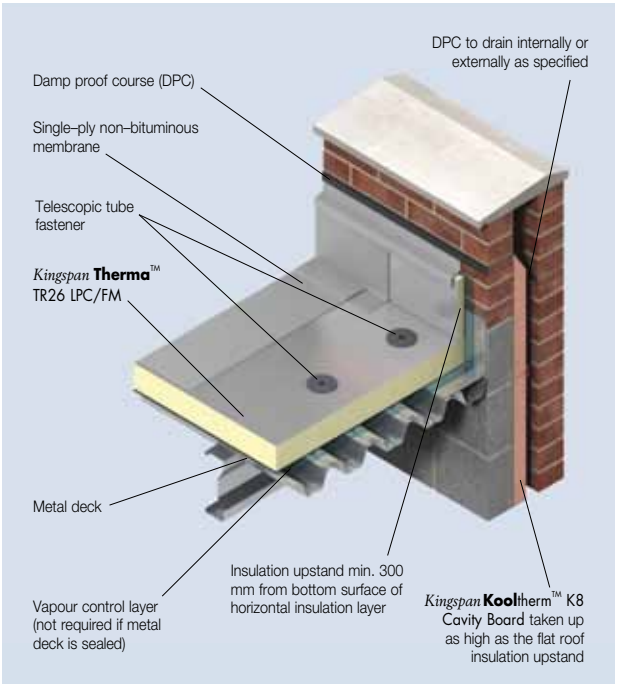


Figure 3

Kingspan **Therma**™ TR27 LPC/FM **in a Metal Deck with No Ceiling**

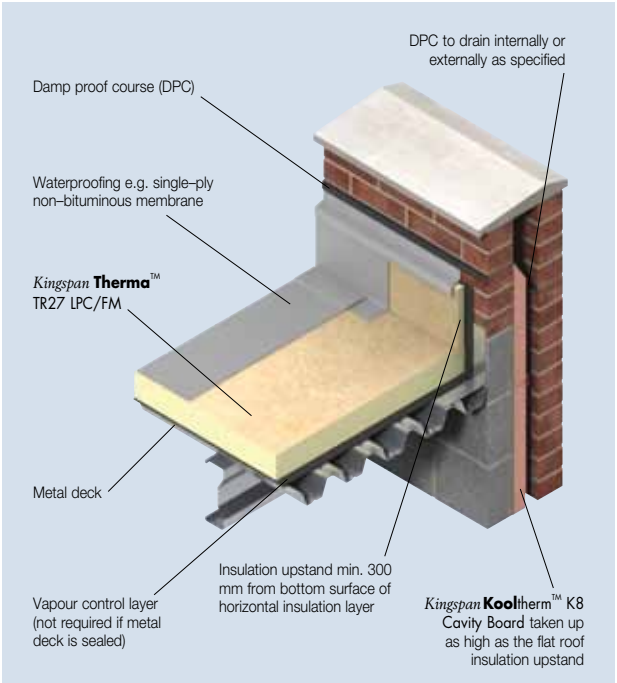


Figure 4

Green Roof Systems

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

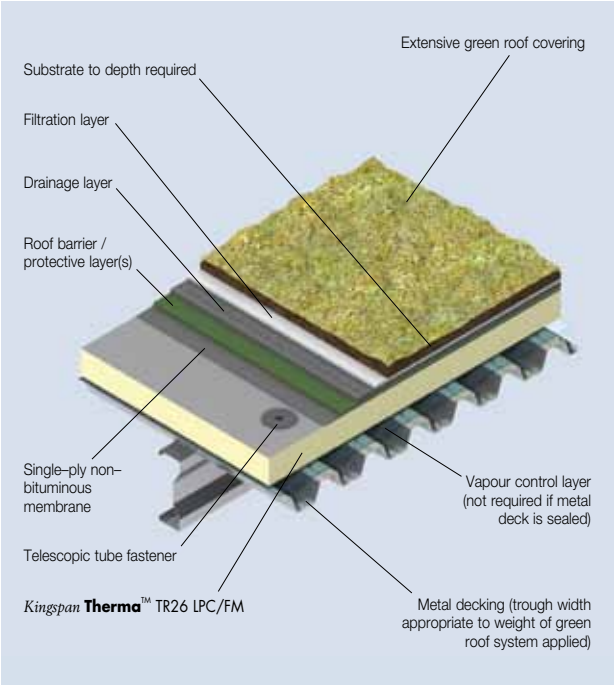


Figure 5

Kingspan **Therma**™ TR27 LPC/FM **in an Extensive Green Roof Covering – Metal Deck with No Ceiling**

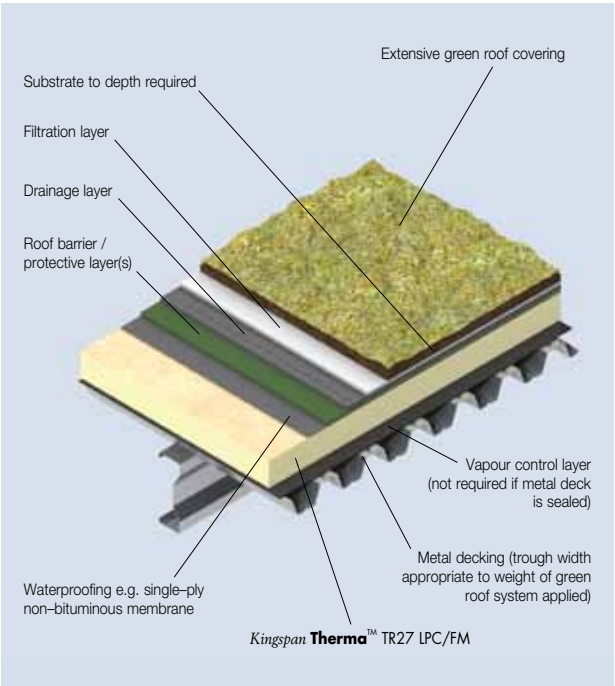


Figure 6

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

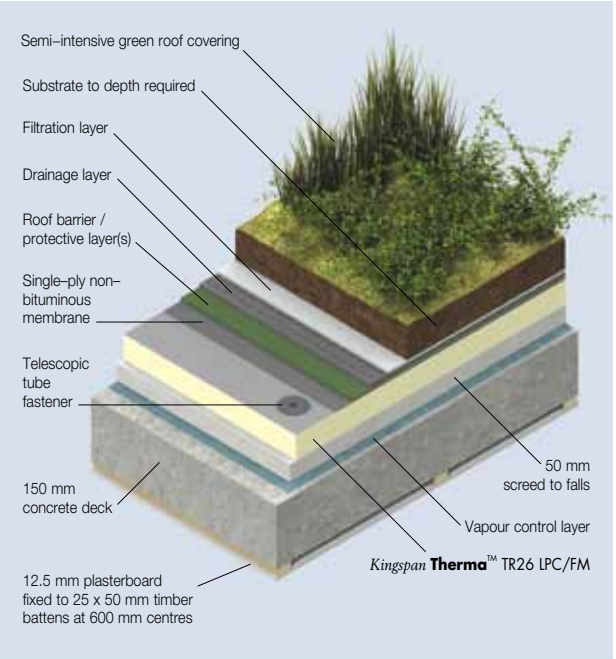


Figure 7

Kingspan **Therma**™ TR27 LPC/FM **in a Semi–intensive Green Roof Covering – Dense Concrete Deck with Suspended Ceiling**

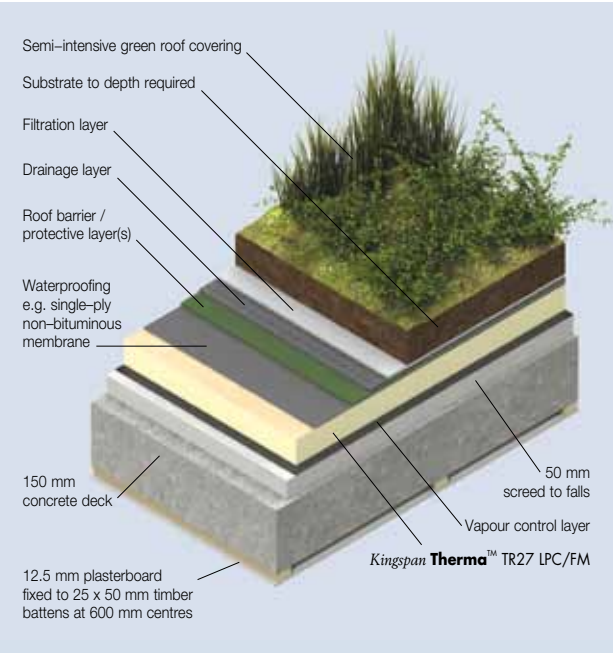


Figure 8

Product Details

Product Description

Kingspan **Therma**™ TR26 LPC/FM

Kingspan **Therma**™ TR26 LPC/FM is a super high performance, fibre-free rigid thermoset insulation, faced on both sides with a low emissivity composite foil autohesively bonded to the insulation core during manufacture.

Kingspan **Therma**™ TR27 LPC/FM

Kingspan **Therma**™ TR27 LPC/FM is a super high performance, fibre-free rigid thermoset insulation, faced on both sides with a coated glass tissue autohesively bonded to the insulation core during manufacture.

Kingspan **Therma**™ products are manufactured without the use of CFCs/HCFCs and have zero Ozone Depletion Potential (ODP).

Product Data	
Thermal Conductivity (λ-value)	0.022 W/mK (*Kingspan* **Therma**™ TR26 LPC/FM) 0.025 W/mK (*Kingspan* **Therma**™ TR27 LPC/FM, Insulant Thickness 80 - 119 mm) 0.024 W/mK (*Kingspan* **Therma**™ TR27 LPC/FM, Insulant Thickness ≥120 mm)
Product Dimensions	2270 mm x 1200 mm (2.72 m²) 1200 mm x 1200 mm (1.44 m²)* 600 mm x 1200 mm (0.72 m²)*
Product Thickness	70, 80, 85, 90, 95, 100, 105, 110, 115, 120, 125, 130, 135, 140, 150 mm

*Applies to *Kingspan* **Therma**™ TR27 LPC/FM only

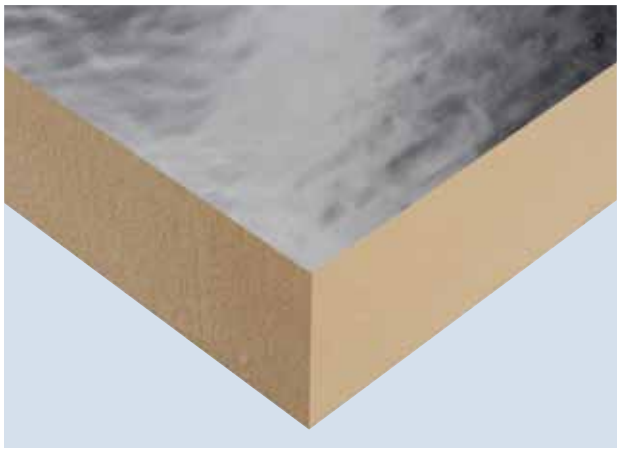


Figure 9 Super high performance foil faced *Kingspan* **Therma**™ TR26 LPC/FM

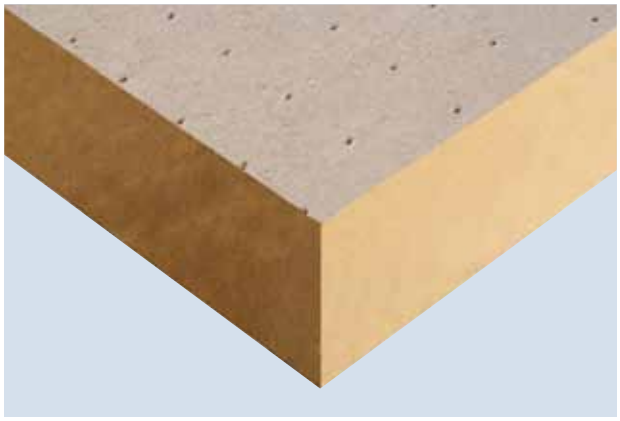


Figure 10 Super high performance glass tissue faced *Kingspan* **Therma**™ TR27 LPC/FM

Product R-value

Kingspan **Therma**™ TR26 LPC/FM

Product Thickness	Product R-value
70 mm	R3.15
80 mm	R3.60
85 mm	R3.85
90 mm	R4.05
95 mm	R4.30
100 mm	R4.50
105 mm	R4.75
110 mm	R5.00
115 mm	R5.20
120 mm	R5.45
125 mm	R5.65
130 mm	R5.90
135 mm	R6.10
140 mm	R6.35
150 mm	R6.80

Kingspan **Therma**™ TR27 LPC/FM

Product Thickness	Product R-value
80 mm	R3.20
85 mm	R3.40
90 mm	R3.60
95 mm	R3.80
100 mm	R4.00
110 mm	R4.40
120 mm	R5.00
125 mm	R5.20
130 mm	R5.40
135 mm	R5.60
140 mm	R5.80
145 mm	R6.00
150 mm	R6.25

The λ–values and R–values detailed on this page are quoted in accordance with BS / I.S. EN 13165 (Thermal insulation products for buildings – Factory made rigid polyurethane foam (PUR) products – Specification).

Specification Guide

Kingspan **Therma**™ TR26 LPC/FM

The roof insulation shall be *Kingspan* **Therma**™ TR26 LPC/FM ____ mm thick, comprising a CFC/HCFC-free and zero Ozone Depletion Potential (ODP) rigid thermoset insulation core with composite foil facings on both sides, manufactured under a management system certified to BS / I.S. EN ISO 9001:2008, BS / I.S. EN ISO 14001:2004 and BS / I.S. OHSAS 18001:2007 by Kingspan Insulation Pty Limited and shall be installed in accordance with the instructions issued by them.

Kingspan **Therma**™ TR27 LPC/FM

The roof insulation shall be *Kingspan* **Therma**™ TR27 LPC/FM ____ mm thick, comprising a CFC/HCFC-free and zero Ozone Depletion Potential (ODP) rigid thermoset insulation core with coated glass tissue facings on both sides, manufactured under a management system certified to BS / I.S. EN ISO 9001:2008, BS / I.S. EN ISO 14001:2004 and BS / I.S. OHSAS 18001:2007 by Kingspan Insulation Pty Limited and shall be installed in accordance with the instructions issued by them.

Tapered Roofing

Kingspan **Therma**™ TR26 LPC/FM and *Kingspan* **Therma**™ TR27 LPC/FM are also available in tapered versions (*Kingspan* **Therma**™ TT46 LPC/FM and *Kingspan* **Therma**™ TT47 LPC/FM) that come with a supporting design service. This ensures that the most 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**™ TR27 LPC/FM 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 (mm)	Minimum Insulant Thickness (mm)
≤75	25
76 – 100	30
101 – 125	35
126 – 150	40
151 – 175	45
176 – 200	50
201 – 225	55
226 – 250	60

Standards and Approvals

Kingspan **Therma**™ TR26 LPC/FM and *Kingspan* **Therma**™ TR27 LPC/FM are manufactured to the highest standards and certified under the following management systems:

Standard	Management System
BS / I.S. EN ISO 9001:2008	Quality Management
BS / I.S. EN ISO 14001:2004	Environmental Management
BS / I.S. OHSAS 18001:2007	Health and Safety Management

Kingspan **Therma**™ TR26 LPC/FM and *Kingspan* **Therma**™ TR27 LPC/FM are also manufactured to the highest standards in accordance with the requirements of:

Requirement	Rigid polyisocyanurate (PIR) and polyurethane (PUR) products for building end–use applications
BS 4841-3*	Specification for laminated boards (roofboards) with auto–adhesively or separately bonded facings for use as roof board thermal insulation under built–up bituminous roofing membranes
BS 4841-4	Specification for laminated boards (roofboards) with auto–adhesively or separately bonded facings for use as roofboard thermal insulation under single–ply roofing membranes

Applies to Kingspan* **Therma™ TR27 LPC/FM *only*

Product Testing

Characteristic	Standard	Result
Compressive Strength	BS EN 826:1996	Typically exceeds 150 kPa at 10% compression
Water Vapour Resistivity	BS EN 12086:1997 / I.S. EN 12086:1998	> 100 MN·s/g·m (*Kingspan* **Therma**™ TR26 LPC/FM) > 300 MN·s/g·m (*Kingspan* **Therma**™ TR27 LPC/FM)

Fire Performance

Kingspan **Therma**™ TR26 LPC/FM and *Kingspan* **Therma**™ TR27 LPC/FM, when subjected to the British Standard fire test specified in the table below, will achieve the result shown, when waterproofed with a single–ply waterproofing membrane.

Test	Result
BS 476–3: 2004 (External fire exposure roof test)	Dependent on single–ply membrane adopted

Kingspan **Therma**™ TR27 LPC/FM, when subjected to the British Standard fire test, specified in the table below, will achieve the result shown when waterproofed with 3 layer built–up felt and a loading coat of 10 mm chippings. For specifications without the chippings please consult the manufacturer of the mineral surfaced cap sheet for their fire classification details.

Test	Result
BS 476–3: 2004 (External fire exposure roof test)	FAA Rating

Further details on the fire performance of Kingspan Insulation products may be obtained from the Kingspan Insulation Technical Service (see back cover).

LPCB & FM Certification

FM Certification

Kingspan **Therma**™ TR26 LPC/FM and *Kingspan* **Therma**™ TR27 LPC/FM are certified as achieving Class 1 Insulated Steel Deck Pass to Factory Mutual Research Standards 4450 (Approval Standard for Class 1 Insulated Steel Deck Pass) and 4470 (Approval Standard for Single–Ply, Polymer–Modified Bitumen Sheet, Built–Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 Non-combustible Roof Deck Construction), subject to the conditions of approval as a roof insulation product for use in Class 1 roof constructions as described in the current edition of the Factory Mutual Research Approval Guide.

FM APPROVED

Class 1 Roof Construction

LPCB Certification

Metal deck roofing constructions incorporating *Kingspan* **Therma**™ TR26 LPC/FM and *Kingspan* **Therma**™ TR27 LPC/FM, produced at Kingspan Insulation's Pembridge and Castleblayney manufacturing facilities, have been successfully tested to LPS 1181: Part 1 (Requirements and Tests for Built–up Cladding and Sandwich Panel Systems for use as the External Envelope of Buildings). The table below indicates the LPCB listed approvals for *Kingspan* **Therma**™ TR26 LPC/FM and *Kingspan* **Therma**™ TR27 LPC/FM.

For further details please contact the Kingspan Insulation Technical Service (see rear cover) or alternatively search for approval reference numbers 388b/01 and 388b/02 on www.redbooklive.com.

Product	Thickness (mm)	Vapour Control	Grade	LPCB Ref No.
Kingspan **Therma**™ TR26 LPC/FM	30 – 120 in a single layer	Sealed metal deck or separate vapour control layer	EXT – B	388b/01
Kingspan **Therma**™ TR27 LPC/FM	30 – 120 in a single layer	Sealed metal deck or separate vapour control layer	EXT – B	388b/02

LPS 1181: Part 1
Certificate No. 388b/01

LPS 1181: Part 1
Certificate No. 388b/02

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.asia*

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

Contact Details

General Enquiries

Email: info@kingspaninsulation.asia

Kingspan Insulation Pty. Ltd. reserves the right to amend product specifications without prior notice. The information, technical details and fixing instructions etc. included in this literature are given in good faith and apply to uses described. Recommendations for use should be verified as to the suitability and compliance with actual requirements, specifications and any applicable laws and regulations. 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.asia

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