



Guaranteed Roofing Solutions

ProTherm
Quantum[®]
powered by Kingspan **OPTIM-R**[®]

The world's thinnest
inverted roof insulation



What is Quantum?

Once in a while a British product is developed which is an industry game changer. Quantum® is an innovative insulation system that can revolutionise a construction build. With a dramatic reduction in depth and no loss of thermal performance, it is brought to market at a time when we urgently need smarter products to conserve resources and save energy.

A global leader in the manufacture of high-performance materials, Kingspan Insulation has worked exclusively with Radmat to develop Quantum® as the system choice for any inverted roof, terrace or balcony.

About Radmat Building Products Ltd.

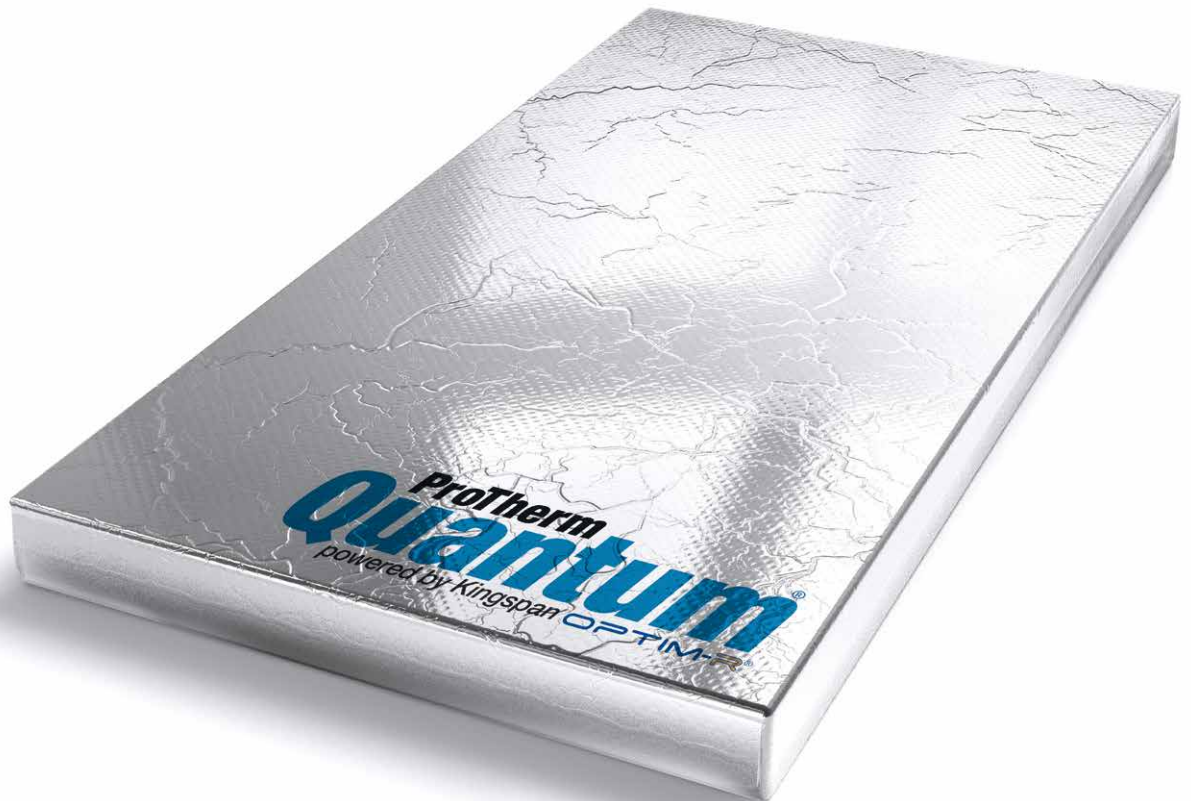
Radmat is an independent British company providing a versatile range of advanced roofing and waterproofing systems. Radmat's high performance waterproofing materials are used industry-wide and are marketed via specification assistance to architects, consulting engineers and quantity surveyors.

The company is committed to providing superior roofing and structural waterproofing products and combines this with exceptional technical support to the specifier and construction team.

About Kingspan Insulation

As a global leader in the manufacture of premium and high performance rigid insulation products and insulated systems for the building fabric Kingspan is recognised throughout the industry for its commitment to innovation, design, quality and technical expertise.

A key part of ProTherm Quantum®, Kingspan's OPTIM-R® provides an insulating performance that is up to five times more thermally efficient than other commonly available insulation materials.



Lose height, gain value

ProTherm Quantum®'s advanced Vacuum Insulation Panel system is specifically developed for the inverted roof. The system has been designed to dramatically reduce the depth of a finished roof system; providing the solution to counter low upstands against the increasing thickness of traditional EPS & XPS products specified in order to meet more stringent thermal demands.

Where is it best used?

On terraces and balconies where there is a requirement for thermal performance, and any insulated area where depth is critical to the overall construction.

What can it help to deliver?

- Exceptional thermal performance ✓
- 75mm threshold clearance ✓
- Level threshold to external balcony ✓

What does it save?

ProTherm Quantum® delivers an exceptional reduction in overall depth compared to a traditional inverted system. The image below highlights the impressive thermal performance.



The depth of board to achieve an R-value of 5.714 W/m²K - rounded to the nearest standard depth.

Scan the code or visit the Quantum® website at:

www.radmatquantum.com



The Anatomy of Quantum

The ProTherm Quantum® system is made up of insulated panels accompanied by thermoset infill boards which are designed to cut and fit around penetrations and curved upstands.

With the limitation of traditional products it can be difficult for a designer to insulate above a habitable space against the backdrop of increasing thermal requirements. This, together with the desire to maximise the glass facade and cater for a level threshold has created a near impossible task, now made easier with Quantum®.

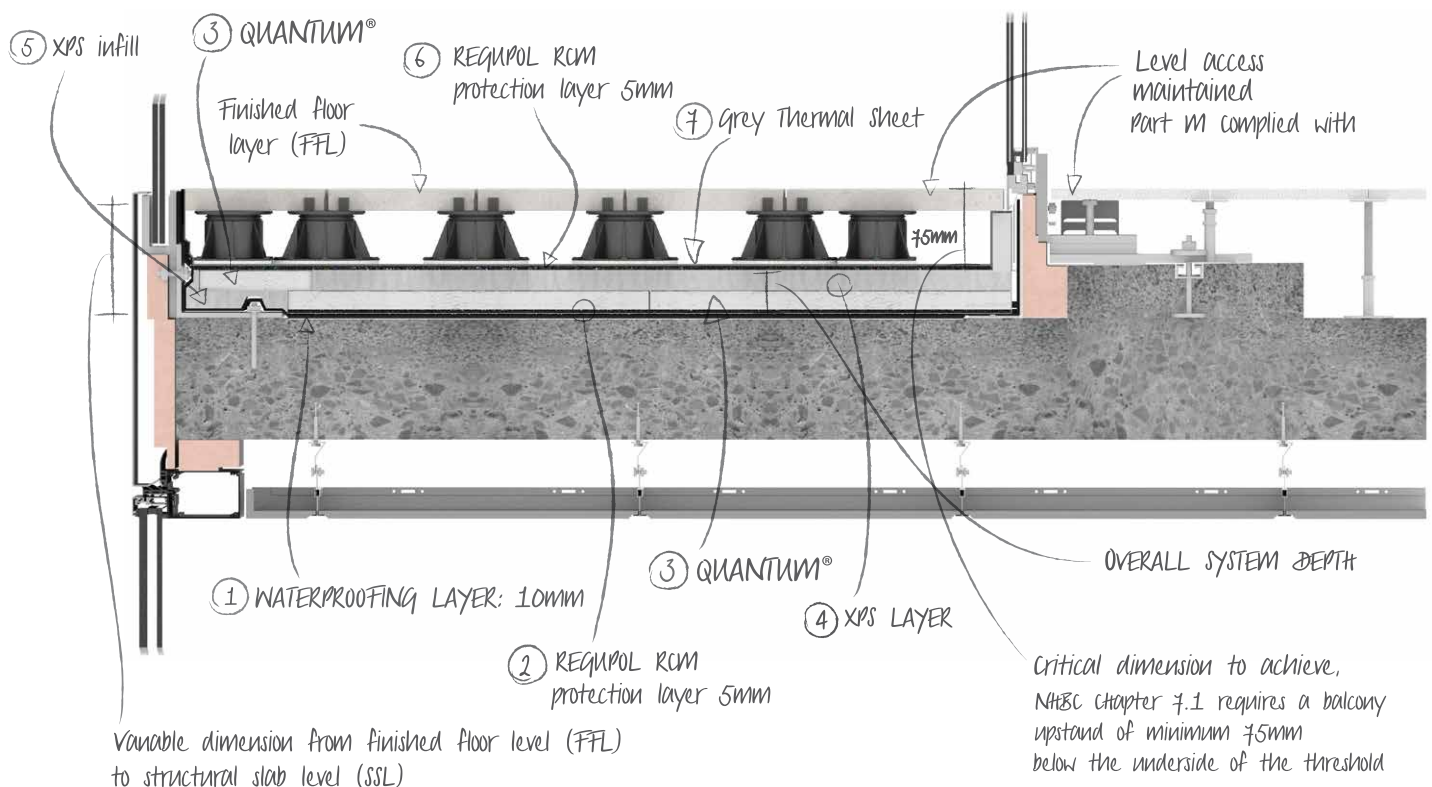
The Quantum® Systems

A **ProTherm Quantum® Hybrid** inverted roof system is our most popular solution. Using a combination of both XPS and Quantum® we can normally supply an exceptional thermal outcome without compromising the internal upstand and deliver the ability to maintain a level floor between both internal and external spaces.

A **ProTherm Quantum® Pure** inverted roof system is the thinnest solution possible where the severe lack of space calls for using just the Quantum® panel. Even in these challenging conditions this system will offer outstanding results.

In the U-Value Calculation chart opposite (column 1), we have inserted common measurements from a structural slab to a finished floor level. As highlighted on the 2D section below, an overall system depth (6) can be measured once the 75mm needed to comply with industry requirements has been deducted.

Within these bands we have provided the calculation for three U-values.



Quantum Performance

Central to both systems' outstanding thermal performance is the **Quantum® Vacuum Insulated Panel (VIP)**. Manufactured in a UK based, state-of-the-art production facility, the Quantum® VIP panels achieve an aged thermal conductivity design value of 0.007 W/mK – the thinnest possible inverted insulation solution available today.

Consisting of a microporous fumed silica core, evacuated of air and moisture prior to being encased and sealed in special, gas-tight, aluminium foil, Quantum® VIP panels are manufactured in a range of sizes and thickness to enable installation as complete boards. This helps ensure optimum thermal performance is achieved across the balcony/terrace area. Where penetrations are required, or where infilling is necessary to accommodate a specific shape or size, thermoset boards can be used. These are manufactured to the same thickness as the Quantum® VIP and are easily cut to suit detailing or infill areas.

U-value Calculation Chart						
1	2	3	4	5	6	7
SSL - FFL	Waterproofing	Protection	Quantum	XPS	System Depth	U-value W/m²K
270mm	10mm	5mm	20mm	160mm	195mm	0.13
	10mm	5mm	30mm	150mm	195mm	0.12
	10mm	5mm	40mm	140mm	195mm	0.11
230mm	10mm	5mm	20mm	120mm	155mm	0.15
	10mm	5mm	40mm	100mm	155mm	0.12
	10mm	5mm	60mm	80mm	155mm	0.10
210mm	10mm	5mm	30mm	90mm	135mm	0.15
	10mm	5mm	40mm	80mm	135mm	0.13
	10mm	5mm	50mm	70mm	135mm	0.12
190mm	10mm	5mm	20mm	80mm	115mm	0.19
	10mm	5mm	40mm	60mm	115mm	0.15
	10mm	5mm	50mm	50mm	115mm	0.13
150mm	10mm	5mm	35mm	20mm	70mm	0.20
	10mm	5mm	40mm	20mm	75mm	0.18
	10mm	10mm	55mm	0mm	75mm	0.16
140mm	10mm	10mm	45mm	0mm	65mm	0.20
135mm	10mm	10mm	40mm	0mm	60mm	0.22
130mm	10mm	10mm	35mm	0mm	55mm	0.25

These U-values are based on the construction shown on the 2D section, however to obtain a specific thermal performance for your project please contact our technical department on 01858 410372 or email techenquiries@radmat.com

High performance insulation for
terraces and balconies

Radmat Building Products Ltd.

Radmat is an independent British company specialising in the manufacture and supply of high performance roof waterproofing systems and components, including Green/Living Roofs. Supplying only through Radmat trained and approved contractors we provide comprehensive design and technical support to the entire construction team, aiding delivery of the right solution at the right price.

Our long standing relationships with some of the UK's leading clients, specifier's, surveyors, main contractors and specialist roofing and waterproofing contractors bear testimony to our levels of commitment to doing the job right first time, an attitude that has benefitted many prestigious projects across the United Kingdom.

Whether new construction or refurbishment Radmat Building Products supplies guaranteed roofing solutions backed by:

- CPD seminars
- Design & Specification support
- NBS Specifications
- CAD Details
- Roof Surveys
- Condition reports & remedial proposals
- In progress inspections
- Guarantee inspections
- Comprehensive guarantees

For comprehensive support for flat roofing projects please contact us.

Products

PermaQuik PQ6100	Hot melt monolithic waterproofing systems
EshaFlex	SBS reinforced bitumen membrane roofing systems
EshaGum	APP reinforced bitumen membrane roofing systems
EshaUniversal	POCB single layer membrane roofing systems
EshaPlan	Single Ply Membranes
ParaFlex	Cold resin waterproofing systems
MedO	Green, Brown and Biodiverse roofing systems
TredWay	Modular paving system
ProTherm Quantum [®]	VIP inverted roof insulation system



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For further information on Radmat products and services please contact us. www.radmat.com