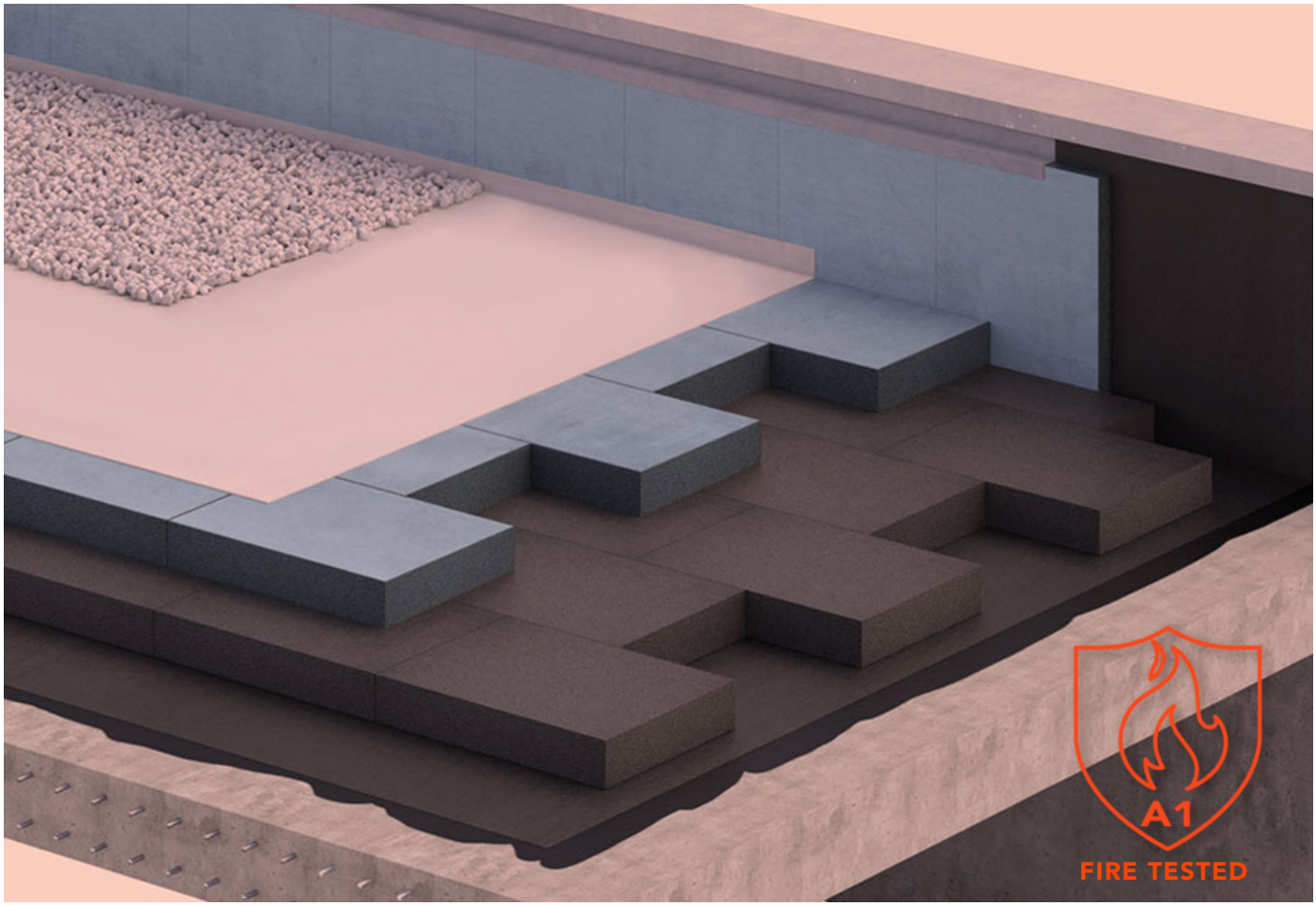
QUANTUM INSULATION

Product Data Sheet

FOAMGLAS® INVATHERM™



Class A1* Non-combustible Inverted Roof insulation suitable for roofs, roof terraces and balconies

Manufactured by FOAMGLAS®

FOAMGLAS® INVATHERM™

General Information

FOAMGLAS® INVATHERM™ has been engineered to meet the demand for a Class A1* inverted roof insulation board for use on roofs, roof terraces and balconies. Suitable for use with any inverted roof waterproofing membrane including hot melt, liquid applied or reinforced bitumen membrane.

Consisting of cellular glass with a pre-applied inorganic coating# on the topside both the core material FOAMGLAS® INVATHERM™ is manufactured from specially graded recycled glass (≥ 60%) and natural raw materials which are available in abundant supply (sand, dolomite, lime). Totally inorganic FOAMGLAS® INVATHERM™ contains no ozone depleting propellants, flame resistant additives or binders, VOC or other volatile substances.

* Class A1 to BS EN 13501-1, sometimes referred to as 'non-combustible'

As product is made from natural materials the colour cannot be guaranteed and can vary in batches.

FOAMGLAS® INVATHERM™ is suitable for use in all forms of inverted roof applications including on Specified Attachments. Suitable applications include projecting open balconies, projecting enclosed balconies, recessed open balconies, recessed enclosed balconies, roofs, roof terraces, enclosed balconies over heated space and insulated walkways.

NHBC Requirements

For Inverted Warm Roof systems, the FOAMGLAS® INVATHERM™ system is acceptable providing the below criteria are achieved:

- FOAMGLAS® INVATHERM™ is installed over the waterproofing layer with tight butted joints
- FOAMGLAS® INVATHERM™ is covered by a Water Flow Reducing Layer (WFRL)
- The pedestals must be certified for reaction to fire performance as either Euroclass 'A1' or A2' in conformance with EN 13501
- The pedestal products must have a circular base with a diameter of at least 170mm and be supported by a rubber underlayment as prescribed in the FOAMGLAS Technical Data Sheet, such as Buzon A-PED-107-142 Adjustable Pedestal installed on Buzon U-pad 200 x 200 x 6mm.
- The maximum load indicated in the Product Data sheets is not exceeded.

Certificates

ISO 9001:2008 Quality Management System, ISO 14001:2004 Environmental Management System, ISO 14025/EN 15804 Environmental Product Declaration, BS EN 13501-1 Reaction to Fire Classification.

Fire Performance

As a roofing system for roofs, roof terraces, enclosed balconies over heated space and insulated walkways

In accordance with Annex of Commission Decision 2000/553/EC, when used in an inverted roof specification including an inorganic covering of either loose laid gravel with a thickness of at least 50mm or a mass ≥ 80 kg/m², sand/cement screed to a thickness of at least 30mm, or cast stone or mineral slabs of at least 40mm thickness a roof system incorporating FOAMGLAS® INVATHERM™ can be considered to be unrestricted under the national Requirements (Classification Broof(t4) to BS EN 13501-5:2016).

As a roofing system component for Specified Attachments such as projecting open balconies, projecting enclosed balconies, recessed open balconies and recessed enclosed balconies

BS EN 13501-1:2016 – FOAMGLAS® INVATHERM™ is certified as achieving Euro Class A1 fire performance by Warringtonfire under reaction to fire classification report No. 19984E.

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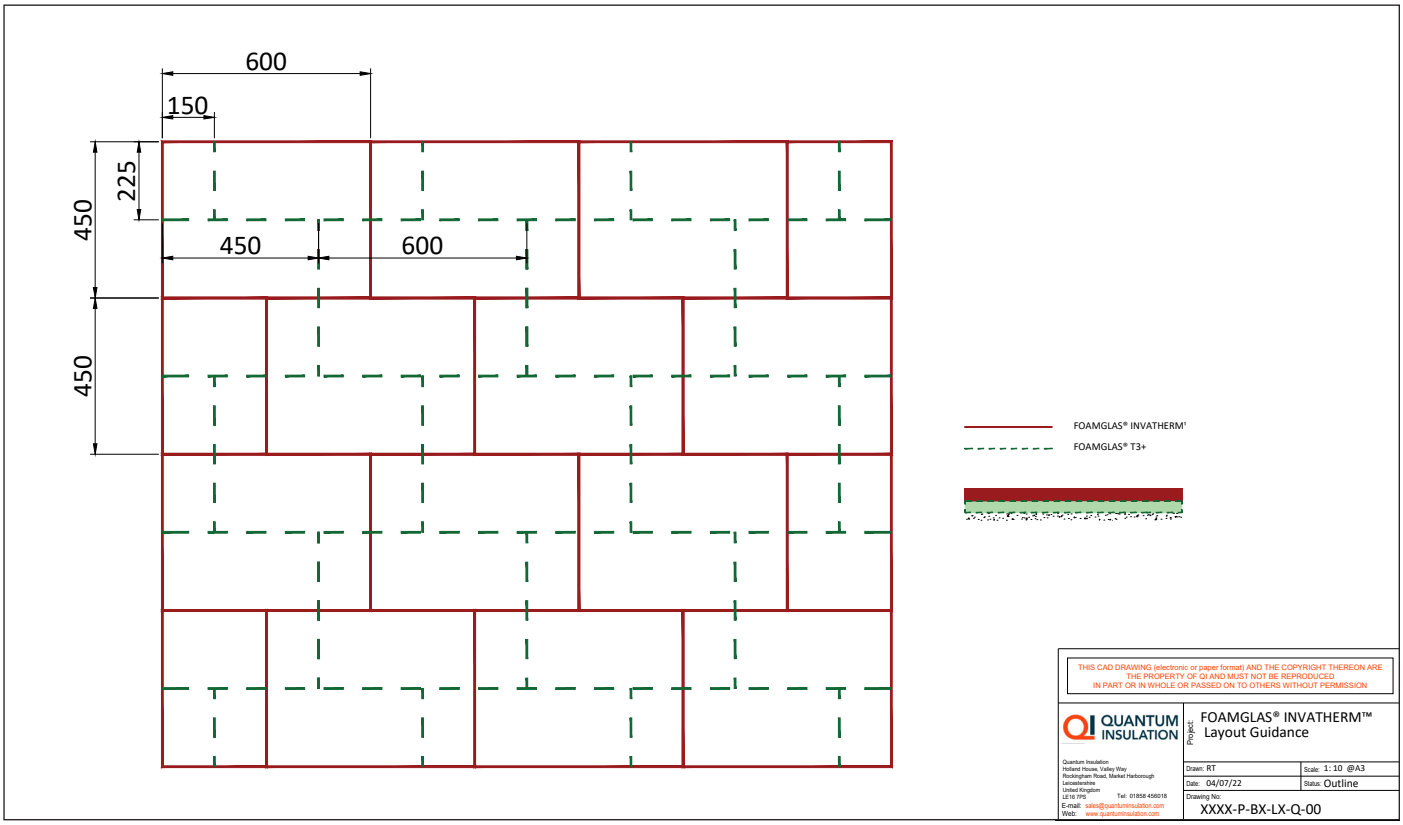
Guidance Layout



When the Insulation system is in 2 Layers, Base Layer + Top Layer
Top Layer = FOAMGLAS® INVATHERM™
Base Layer = FOAMGLAS® T3+ Slab

Each insulation layer is offset relative to the other (see above) with a minimum overlap / stagger of 15cm.

The insulation Base Layer FOAMGLAS® T3+ Slab should always be installed with staggered joints, with an overlap / stagger of minimum 15cm (dotted line).

The Top Layer FOAMGLAS® INVATHERM™ should always be installed with with staggered joints, with an overlap / stagger of minimum 15cm (red line).

To maximise insulating performance ALL abutments and insulation joints MUST be tightly butted up. If necessary re-measure replace or cut / sand down and re-install any insulation which is not fitting correctly.

This simple method ensures a robust and stable construction.

FOAMGLAS® INVATHERM™ must be installed in accordance with FOAMGLAS® Technical Guidance 05, copy available on request.

Upstands
The external face of the upstand can be exposed to the weather.
The top edge of the upstand **must** be protected from the weather.

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Delivery conditions

Delivery form

Shrunk wrapped on a pallet, quantity depending on board thickness.

Storage and transport

During shipment, storage and installation handle with care so as to avoid physical damage.

DELIVERY FORM (CONTENT PER PACKAGE)			
Length (mm)	600	600	600
Width (mm)	450	450	450
Thickness (mm)*	100	140	200
Blocks per pack	1	1	1
Packs per pallet	48	32	24
Square metre [m^2] per pallet	12.96	8.64	6.48

*Other thicknesses may be available on request, subject to minimum order quantities.

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FOAMGLAS® INVATHERM™

DESCRIPTION	
Appearance top side	Grey*
Core	Specially graded recycled glass** and natural raw materials

DECLARED PERFORMANCE

Essential characteristics	**Performance**	**Unit**	**EN Code EN 13167**
Density (± 15%)	100	kg/m³	BS EN 1602
Dimensions and tolerances			
- Thickness (± 2 mm)***	100, 140, 200	mm	BS EN 823
- Width (± 2 mm)	450 ± 3	mm	BS EN 822
- Length (± 2 mm)	600 ± 3	mm	BS EN 822
Thermal conductivity			
Declared value (1)			
- Thickness 100, 140, 200 mm	$\lambda_D \leq 0.038$	W/mK	EN ISO 10456
Reaction to fire	Euroclas A1	-	EN 13105-1
Mechanical properties			
- Compressive strength at 10% deformation	≥ 400	kPa	EN 826 annexe A
- Bending strength	≥ 400	kPa	EN 12089
- Tensile strength	≥ 100	kPa	– EN 1607
- Point load	≤ 1.5	mm	EN 12430
- Point load top	≤ 1 (≤ 0.5)	kPa	EN 12430
Hygrometric properties			
- Water absorption in short term	WS ≤ 0.5	kg/m²	EN 1609
- Water vapour transmision	∞	-	EN 12086
- Water vapour diffusion resistance factor (μ), typical	∞	-	EN ISO 10456
- Freeze/thaw	resistant	-	-
- Dimensional stability after 48h @70°C & 90% RH	DS (70.90)	$\Delta\varepsilon_{l,b} \leq 0.5\%$ $\Delta\varepsilon_d \leq 1\%$	EN 1604
- Hydroscopity and Capiliarity	zero	-	-
Environmental properties			
- Ozone depletion potential	Zero	-	-
Other properties			
- Service temperature limits	-265°C to +430°C	-	-
- Melting point	>1000	°C	cf DIN 4102-17
- Thermal expansion coefficient	9 x 10^{-6} K^{-1}	-	EN 13471
- Specific heat	1000	J/(kg·K)	EN ISO 10456

[1] CE-marking ensures conformity with the mandatory essential requirements of CPD as mentioned in EN 13167; within the CEN Keymark certification all mentioned characteristics are certified by an empowered, notified and accredited 3rd party.

* As product is made from natural materials the colour cannot be guaranteed and can vary in batches.

** ≥ 60% recycled glass consists of highly selected postconsumer glass and highly selected production scrap/co-products

*** Other thicknesses may be available on request, subject to minimum order quantities

For further information on Quantum Insulation products and services please call **01858 456018** or email **sales@quantuminsulation.com** **14/02/25**

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