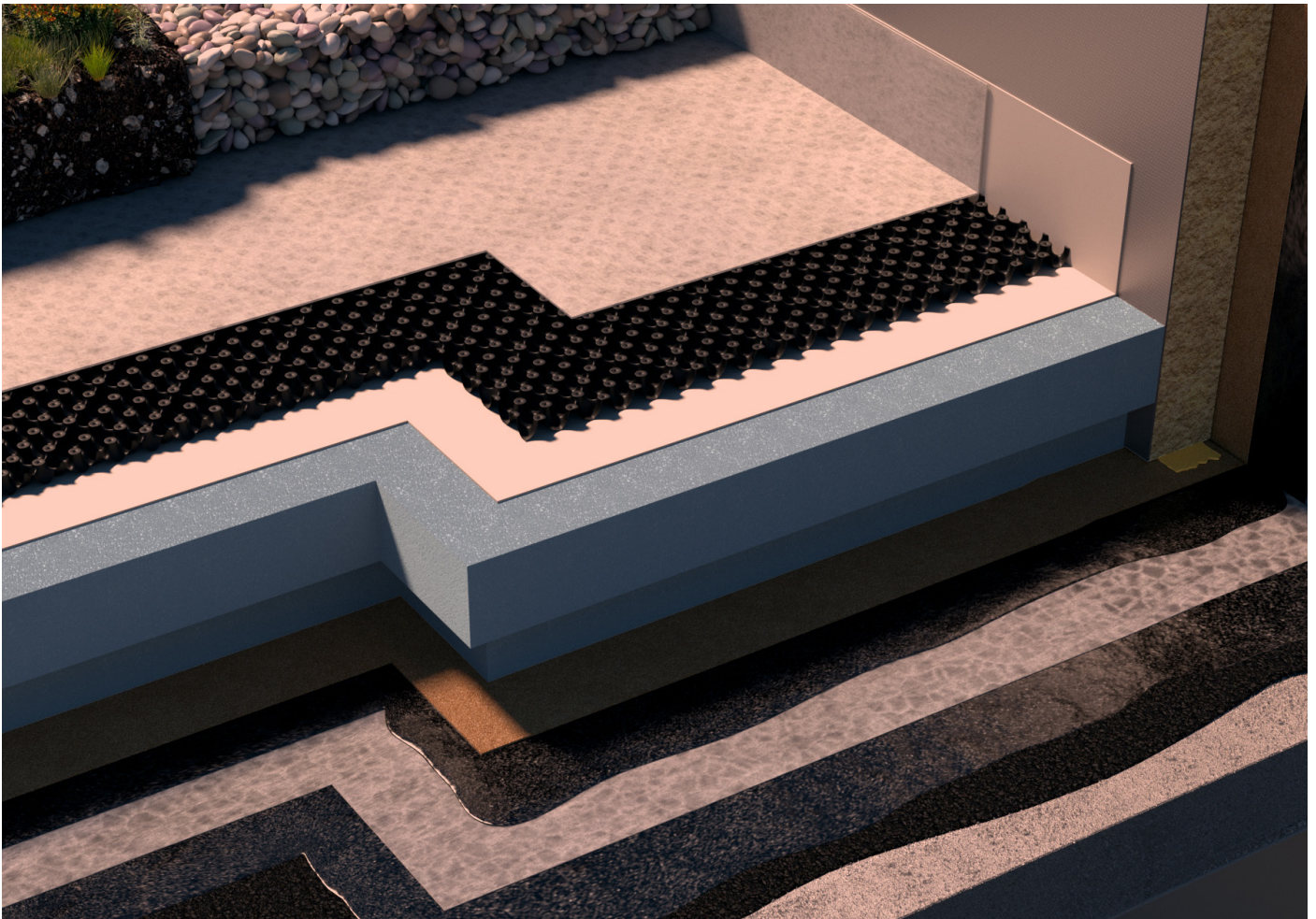


RAVATHERM XPS X ULTRA 300 SL



Inverted Roof Insulation with a unique rigid, closed cell type extruded polystyrene board with integral high density skin.

Manufactured by



RAVATHERM XPS X ULTRA 300 SL

General Information

RAVATHERM XPS X ULTRA 300 SL Inverted Roof Insulation is a unique rigid, closed cell type extruded polystyrene board with integral high density skin. RAVATHERM XPS X ULTRA 300 SL Inverted Roof Insulation utilises infra-red blocking particles to scatter and reflect heat radiation.

RAVATHERM XPS X ULTRA 300 SL Inverted Roof Insulation has a Zero Ozone Depletion Potential (ODP), a Global Warming Potential (GWP) of less than 5.

Use with RAVATHERM XPS X MK Water Flow Reducing Layer prior to the installation of paving, ballast, a green roof or timber decking.

For use with appropriate Waterproofing Systems.

Suitable Applications

RAVATHERM XPS X ULTRA 300 SL is suitable for use in roofs, roof terraces, enclosed balconies over heated space and insulated walkways in an inverted roof construction. When used in the inverted roof applications listed in the Fire Performance section below roof assemblies incorporating RAVATHERM XPS X ULTRA 300 SL achieve Broof(t4) Classification to BS EN 13501-5 as required by Approved Document B 2019 edition, Section B4, Limitations on roof coverings.

RAVATHERM XPS X ULTRA 300 SL is not suitable for use in inverted roof applications on specified attachments such as projecting open balconies, projecting enclosed balconies, recessed open balconies or recessed enclosed balconies.

RAVATHERM XPS X ULTRA 300 SL is not suitable for use in warm roof applications (where the waterproofing is installed above the insulation board).

Certificates

BBA Certified 21/5923, ISO 9001:2008 Quality Management System, ISO 14001:2004 Environmental Management System, EPD as per ISO 14025 and EN 15804.

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 $\geq 80 \text{ kg/m}^2$, 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 RAVATHERM XPS X ULTRA 300 SL can be considered to be unrestricted under the national Requirements (Classification Broof(t4) to BS EN 13501-5:2016).

BS EN 13501-5:2016 – When tested with a covering of 50mm thick paving on InStar plastic pedestal supports, or 50/75mm ballast, or Profildeck aluminium framing on supports with 20mm Porcelain Paving a roof construction incorporating RAVATHERM XPS X ULTRA 300 SL achieved a classification of Broof(t4) and as such is unrestricted by the National Building Regulations.

BS 476 Part 3: 2004 – When tested with a covering of 50mm thick paving on InStar plastic pedestal supports, 50/75mm ballast, Profildeck aluminium framing with 20mm Porcelain Paving, or Dura Deck Resist Composite Deck on supports with 50mm 20/40mm ballast a roof construction incorporating RAVATHERM XPS X ULTRA 300 SL achieved a classification of EXT.FAA and as such is unrestricted by the National Building Regulations.

As a product in isolation

BS EN 13501-1:2016 – RAVATHERM XPS X ULTRA 300 SL Inverted Roof Insulation contains PolyFR, a REACH compliant flame retardant, that ensures Euro Class E performance.

RAVATHERM XPS X ULTRA 300 SL Inverted Roof Insulation contains PolyFR, a REACH compliant flame retardant, that ensures Euro Class E performance to EN13501-1.

Hexabromocyclododecane (HBCD) was phased out prior to the 21st August 2015.

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Installation Instructions

- Apply RAVATHERM XPS X ULTRA 300 SL Inverted Roof Insulation boards parallel to roof perimeter long edges. Stagger end joints.
- Lay RAVATHERM XPS X ULTRA 300 SL Inverted Roof Insulation boards with edges in moderate contact without forcing.
- Cut RAVATHERM XPS X ULTRA 300 SL Inverted Roof Insulation to fit neatly to perimeter blocking and around penetrations through roof, when using a 2nd layer stagger joints of insulation from first layer.
- Unroll RAVATHERM XPS X MK Filter/Water Flow Reducing Layer over the RAVATHERM XPS X ULTRA 300 SL at right angles to the slope ensuring each sheet overlaps the next by 150mm (laps running down the slope). If finishing the roof with gravel ballast of a maximum depth of 50mm overlaps should be increased to 300mm. At upstands and penetrations RAVATHERM XPS X MK Filter/Water Flow Reducing Layer should be turned up to finish above the surface of the ballast layer.
- Apply no more RAVATHERM XPS X ULTRA 300 SL inverted Roof Insulation than can be covered with aggregate ballast/concrete roof pavers/green roofing in the same day.
- Keep RAVATHERM XPS X ULTRA 300 SL Inverted Roof Insulation minimum 75mm from heat emitting devices, and minimum 50mm from sidewalls of chimneys and vents.

Delivery conditions

Delivery form

Standard delivery form is a 'supercube'. Deliveries are on a curtain-side or optional flat-bed articulated vehicle. One supercube containing approximately 15m³ and is approximately 2400 x 2400 x 2500mm. A full articulated truck load contains 5 supercubes or approximately 70m³. (See dimensions table overleaf)

RAVATHERM XPS X ULTRA 300 SL Inverted Roof Insulation is available shrunk wrapped on pallets to special order, quantity depending on board thickness. Deliveries are on a rigid curtain-side or optional rigid flat-bed vehicle. A full rigid truck contains 12 pallets (the equivalent of 3 supercubes).

Unloading

Supercubes are intended to be unloaded and crane lifted using strops in 2 movements;

1. lift the supercube clear of the vehicle and allow to settle
2. lift the supercube to roof level

Fork extensions can also be used to unload a supercube, and can be supplied with the delivery if requested in advance.

Palletised RAVATHERM XPS X ULTRA 300 SL Inverted Roof Insulation can be unloaded using a pump truck.

Storage and transport

During shipment, storage, installation and use, this material should not be exposed to flame or other ignition sources. This material contains a halogenated flame retardant additive system to inhibit accidental ignition from small fire sources.

Product identification:

Information on the pack;

Product name.

Dimensions.

Approvals.

Production date.

Batch number.

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DELIVERY FORM									
Board Dimensions			Board quantity	Pack quantity	m ³	m ²	Supercube Dimensions		
Thickness mm	Width mm	Length mm	Per pack	Per Pallet	Per Pack	Per Pack	Height mm	Width mm	Length mm
70	600	1250	6	48	0.315	4.5	2720	2400	2500
80	600	1250	5	48	0.3	3.75	2600	2400	2500
105	600	1250	4	48	0.315	3	2720	2400	2500
130	600	1250	3	56	0.293	2.25	2930	2400	2500
145	600	1250	3	48	48	2.25	2810	2400	2500
175	600	1250	2	56	56	1.25	2650	2400	2500
205	600	1250	2	48	48	1.25	2660	2400	2500

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NBS Specification Clauses

- 130 INVERTED ROOF COATING TO CONCRETE/TIMBER/METAL DECK: "Insert roof area" _____
- Insulation: 70, 80, 105, 130, 145, 175, 205 mm RAVATHERM XPS X ULTRA 300 SL Inverted Polystyrene Insulation Board to meet a 'U' value of _____ w/m²k. BBA Certification number 19/5648. To meet Green Guide to Specification "A+" rating with Zero Ozone Depletion Potential & Less than 5 Global Warming Potential. As clause 340.
 - Filter layer: RAVATHERM XPS X MK Water Flow Reducing Layer, with 300mm laps.

PRODUCTS

- 340 INVERTED ROOF INSULATION
- Type: Extruded Polystyrene.
 - Standard: BBA Certification 19/5648 and Green Guide to specification "A+" rating.
 - Manufacturer: [RAVAGO BUILDING SOLUTIONS UK LIMITED, info.uk.rbs@ravago.com](mailto:info.uk.rbs@ravago.com)
Estuary Road - PE30 2HJ King's Lynn, Norfolk (United Kingdom)
 - Product reference: RAVATHERM XPS X ULTRA 300 SL
 - Grade: XPS 34 kg/m³.
 - Recycled content: minimum 10%.
 - Edges: Shiplap.
 - Thickness: 70, 80, 105, 130, 145, 175, 205 mm to achieve _____ W/m²K 'U' Value or better. To Comply with Building Regulations Part L2A, the Services Engineer's performance requirements and any other stated requirements in conjunction with other components.
 - Integral topping: Not required.
- 354 VAPOUR PERMEABLE WATER CONTROL LAYER
- Type: Spun bonded polyethylene.
 - Manufacturer: [RAVAGO BUILDING SOLUTIONS UK LIMITED, info.uk.rbs@ravago.com](mailto:info.uk.rbs@ravago.com)
Estuary Road - PE30 2HJ King's Lynn, Norfolk (United Kingdom)
 - Product reference: RAVATHERM XPS X MK Water Flow Reducing Layer.

SURFACING

- 830 LAYING INVERTED ROOF INSULATION
- Preparation: Clear roof of other trades.
 - Condition of substrate: Clean.
 - Setting out: loose lay with staggered joints. Minimize cutting and avoid small pieces at perimeters and penetrations.
 - Joints: Butt together.
 - Projections, upstands, rainwater outlets, etc: Cut insulation cleanly and fit closely around.
 - Completion: The Boards will need to be in good condition, well-fitting and stable. Cover to prevent wind uplift and floatation as soon as possible.
 - Insulation to upstands: As clause 342.
- 832 VAPOUR PERMEABLE MEMBRANES
- To be rolled out loose over the [QI Inverted Roof Insulation](#). The material is to be lapped a minimum of 300mm in a direction that helps shed water from the RAVATHERM XPS X MK Water Flow Reducing Layer rather than beneath the insulation. The material should be dressed up all upstands and details to the height of the surfacing. The RAVATHERM XPS X MK Water Flow Reducing Layer should dress down into the outlet.

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PRODUCT DESCRIPTION

Appearance top side	Grey Skin
Core	Grey color, HFC free, Extruded polystyrene foam XPS (EN13164).
Appearance bottom side	Grey Skin

DECLARED PERFORMANCE

Essential characteristics	Performance	Unit	EN Code	Standard
Ozone Depletion Potential	Zero	-	-	-
Global Warming Potential	< 5	-	-	-
Density (aim, foam only)	34	kg/m ³	-	BS EN 1602
Dimensions and tolerances				
- Thickness	70*, 80, 105, 130, 145, 175, 205	mm	-	BS EN 823
- Width	600	mm	-	BS EN 822
- Length	1250	mm	-	BS EN 822
Thermal conductivity			T1	
Declared value (1)			λ_D	
- Thickness 80 - 205 mm	0.027	W/mK	λ_D	BS EN 13164
Design value (1)			λ_D	
- Thickness 80 - 205 mm	0.028	W/mK	λ_D	BS EN 13164
E-Modulus (typical)	12 - 20	MPa	CC(2/1.5/50)oc	
Mechanical properties				
- Compressive strength at 10% deformation	300	kPa	CS(10\Y)	BS EN 826
- Design load 2% max. deflection (50 years)	110	kN/m ²	CC(2/1.5/50)oc	BS EN 1606
Hygrometric properties				
- Long term water absorption by immersion (28 days)	< 0.7	vol %	-	BS EN 12087
- Long term water absorption by diffusion		vol %	-	BS EN 12088
- dN \geq 50 mm to <80 mm	\leq 2	vol %	WD(V)	BS EN 12088
- dN \geq 80 mm	\leq 1	vol %	WD(V)	BS EN 12088
- Water vapour diffusion resistance factor (μ), typical	150	vol %	-	BS EN 10456
- Freeze/thaw, after 300 cycles	< 1	vol %	FTCD	BS EN 12091
- Dimensional stability under specified temperature and humidity conditions	\leq 5	%	DS(70,90)	BS EN 1604
- Deformation under specified compressive load and temperature conditions	\leq 5	%	DLT(2)5	BS EN 1605
Reaction to fire	Class E	-	Euroclass	BS EN 13501-1 2016
Linear thermal expansion coefficient	0.07	mm/m.K	-	-
Maximum service temperature	-50/+75	°C	-	-
Capillarity	0	-	-	-
Surface	Skin	-	-	-
Edge profile	Shiplap	-	-	-

(1) Declared thermal conductivity λ_D according to BS EN 13164 (§ 4.2.1; Annex A; Annex C.2 and C.4.1)

EN designation code T1-CS(10\Y)300-CC(2/1,5/50)110-WL(T)0,7-WD(V)3-FT2-DS(TH)-DLT(2)5

* subject to minimum order quantity.

This information given in good faith and is based on the latest knowledge available to Quantum Insulation Ltd. Whilst every effort has been made to ensure that the contents of the publication are current while going to press, customers are advised that products, techniques and codes of practice are under constant review and liable to change without notice.

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