Product Data Sheet

V6.3

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IKO enertherm XPS & WCL

IKO enertherm XPS rigid extruded polystyrene (XPS) insulation.

Thickness (mm)	Product Code	Thermal Resistance (m2K/W)	Length (mm)	Width (mm)	Compressive Strength *(kPa)
50	30400050	1.50	1,250	600	300
70	30400070	2.10	1,250	600	300
100	30400100	3.00	1,250	600	300
130	30400130	3.90	1,250	600	300
160	30400160	4.80	1,250	600	300
180	30400180	5.45	1,250	600	300
200	30400200	6.05	1,250	600	300
205 **	30400205	6.21	1,250	600	300
210 **	30400210	6.36	1,250	600	300
215 **	30400215	7.51	1,250	600	300
220	30400220	6.65	1,250	600	300
230	30400230	6.95	1,250	600	300
245	30400245	7.40	1,250	600	300

* minimum compressive strength at 10% compression
** NB 205, 210 and 215mm boards are made to order

IKO enertherm XPS is supplied as a Lap Jointed Board with a 15mm overlap.
Design Thermal Conductivity (λD);
≥ 100mm - 0.034W/mK,
< 100mm - 0.035W/mK .

Features & Benefits

- 15mm lap joint
- Excellent thermal performance
- High compressive strength
- Highly resistant to water absorption
- Able to resist repeated freeze/ thaw cycles
- Lightweight & easy to install
- Tough and durable
- Dimensionally stable
- BBA certified

Introduction

IKO enertherm XPS is a rigid extruded polystyrene (XPS) board with a Global Warming Potential (GWP) of less thanfive.

A lightweight, lap jointed board with high compressive strength and performance.

Used for the thermal insulation of a wide variety of flat roofs including inverted roofs below ballast or paving, green roofs and blue roofs.

Thermal Performance & Edge Finish

The declared thermal conductivity of IKO enertherm XPS is **0.033 W/mK.**

The design thermal conductivity including moisture correction factor is;

≥ 100mm thickness = **0.034W/mK**
< 100mm thickness = **0.035W/mK**

IKO enertherm XPS: 15mm rebated edge profile to all 4 sides.

Environmental

The product represents no known threat to the environment and has zero Ozone Depletion Potential (ODP) and a Global Warming Potential (GWP) of less than five. It is non bio-degradable and 100% recyclable.

Specification

Compressive Strength: IKO enertherm XPS is highly resistant to compression and withstands both occasional and long term static loads. The high compressive strength and rigidity of the product allows a range of ballast material including gravel, soil and concrete slabs to be used as part of the construction. Load bearing construction elements should be designed to adequately support the combination of imposed and dead loads without creating excessive deflection. IKO enertherm XPS has a compressive strength of 300kpa at 10% compression.

NB: As a guide a safety factor of 2.50 should be employed for design purposes when assessing the impact of long term loading.

Durability: Continuous service temperature limit is up to +70º C.

Water Vapour Resistance: 625MNs/g.m when tested in accordance with BS EN 12086.

Moisture Absorption: 0.6% by volume when tested in accordance with EN 12087.

Nominal Density: 32kg/m^3

IKO enertherm XPS (mm)	U-values (W/m2K)
130	0.25
160	0.20 - 0.24
180	0.18 - 0.19
200	0.16 - 0.17
220	0.15
230	0.14
245	0.13
270 (200+70)	0.12
290 (220+70)	0.11
320 (2x160)	0.10

Calculation Method: BS EN ISO 6946 incorporating Design Lambda value	
150mm Reinforced Concrete Deck (2% reinforcement) 7.5mm Hot	2.50 W/mK
Melt Waterproofing Layer R-value	0.030 m2K/W
IKO enertherm WCL f.x	0.001
50mm Layer 20-40mm Ballast	
Rainfall - Met Office Statistics, UK Average 1981 – 2010	3.16 mm/day

Handling & Storage

IKO enertherm XPS is lightweight and easy to handle and install. It is supplied in four sided packaging designed to be easily recognised and is labelled with identifying product and manufacturing data. Ensure the product is not stored close to open flames or other ignition sources and avoid volatile organic compounds and chemicals such as solvents. Do not expose to prolonged sunlight as this will result in surface degradation. When outside storage for extended periods is required cover the products with opaque/light coloured sheeting.

Installation

Boards should be laid in a brick bond pattern, ensuring all joints between the boards are tight and that no gaps exist where they meet rooflights, edge details and other services which perforate the roof deck. The boards can be cut easily using a fine tooth saw, sharp knife or a hot wire cutter.

Ballasting

A roof ballast layer must be installed as work progresses to protect the insulation boards and the IKO enertherm WCL from the effects of wind uplift and UV degradation. The ballasted roof finish may be gravel or paving ballast, which must be assessed by a specialist for its suitability according to region exposure and building height. In addition, the dead load imposed by the finish must be allowed for in calculating the total acceptable load on the deck. Care must be taken to ensure that upgraded roofs are capable of carrying the increased load and depth of the installed system. Ballast must not be stacked in one place on the roof unless the roof is capable of supporting it.

For buildings in sheltered regions, or less than 10 storeys, a minimum load of 80Kg/m2 to resist wind uplift is required. This can be achieved with 50mm depth of 20 - 40mm washed rounded ballast or minimum 40mm thick concrete slabs. On buildings up to 15 storeys, the build-up above can still be used, but the perimeter must be loaded with paving slabs determined by reference to BS EN 1991-1-2: 2002. For other exposure conditions or tall buildings, specialist advice should be sought.

Product Data Sheet

IKO enertherm WCL

IKO enertherm WCL is used as a Water Flow Reducing Layer (WFRL) between enertherm XPS insulation and the roof ballast layer in inverted roofs, including green and blue roof applications.

Length (m)	Width (m)	Area per Roll (m^2)
100	1.5	120 (allowing for laps)

All dimensions are nominal

Introduction

IKO enertherm WCL is a high performance, thermally bonded tri-laminate of polypropylene; spun bonded (outer layers) and microporous (inner layer). It is used in combination with IKO enertherm XPS as part of the IKO enertherm system for inverted and green roofs.

IKO enertherm WCL's water resistant properties result in reducing the flow of water through the roof construction. This means that the impact on thermal performance by rainwater cooling is virtually negated.

Features & Benefits

- Improves thermal performance
- Water vapour permeable

Specification

Water Resistance: Able to resist a 1.50m head of water.

Property	Test Method	Data
Weight	-	95g/m²
Tensile strength in MD	EN 12311-1	185N/5cm
Tensile strength in CD	EN12311-1	130N/5cm
Nail tear resistance 20cm folded MD/CD	EN12310 0 1 prEN 13859	55N/20cm 65N/20cm
Water resistance	EN 20811	1.5m of water head
Water vapour transmission	Lyssy	1,200g/m$^{2.d}$
UV stability under constant exposure	prEN 1297	Up to 4 months

Handling & Storage

IKO enertherm WCL is easy to handle and install and can be cut with a knife or scissors. It is supplied in rolls in polythene packaging and is labelled with identifying product and manufacturing data. The product may be stored flat or upright on a clean, level surface and should be kept under cover.

Installation

IKO enertherm WCL must be laid with 300mm laps, overlapping in the downward direction of the designed flat roof slope. At upstands and penetrations, the membrane must be turned up to finish above the surface of the ballast layer; at drainage outlets, the membrane must be turned down. For further guidance please refer to Liquid Roofing & Waterproofing Association (LRWA) Guidance Note No.14 – Best Practice for the Installation of Water Flow Reducing Layers in Inverted Roofs

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BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 17/5467

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