

IKO enertherm EPS

IKO enertherm EPS insulation for inverted roofs is manufactured from an innovative expanded polystyrene (EPS) with low water absorption properties.

Introduction

The **IKO enertherm EPS** roof insulation range of products is approved to ETAG 031 (European Technical Approval Guidelines). It is supplied in 200 & 300 grade boards to meet the specified compression performance.

An inverted roof construction places thermal insulation above the waterproof layer. This maintains the waterproof membrane at an even temperature and protects it from the damaging effects of UV radiation or the effects of the weather. The specified thermal performance of the inverted roof is achieved through the roof design and the thickness of the insulation used.

The thickness of insulation required to achieve a specified U-value depends on a number of factors. The figures below are guidelines and are only applicable when used with the **IKO enertherm EPS WCL** (Water Control Layer).



	IKO enertherm EPS 200 and 300	IKO enertherm EPS HP 200
U-value W/m ² K	mm	mm
0.25	145	135
0.24	150	140
0.23	160	145
0.22	165	150
0.21	175	160
0.20	180	165
0.19	190	175
0.18	200	185
0.17	215	195
0.16	225	210
0.15	240	225
0.14	260	235
0.13	280	255
0.12	300	275
0.11	325	300
0.10	360	330

Features & Benefits

- 200 grade is A+ and 300 grade is A rated in the BRE Green Guide
- Specify to 1mm increments to precisely achieve thermal performance
- Designed with 15mm overlap to prevent board uplift during installation
- Minimum 25 Year service life
- 100% recyclable
- Suitable for green roofs
- Achieves Fire Class E

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

Product Properties – IKO enertherm EPS (Flat Roof Inverted)			
	IKO enertherm EPS 200	IKO enertherm EPS 300	IKO enertherm EPS HP 200
Mechanical Properties			
Compressive Strength at 10% (kN/m ²)	200	300	200
Compressive Strength at 1% (Design Load)	90 kN/m ²	120 kN/m ²	90 kN/m ²
Bending Strength (kN/m ²)	250	450	250
Thermal Properties			
Declared Thermal Conductivity (W/mK)	0.033	0.33	0.031
Corrected Thermal Conductivity (W/mK)	0.038	0.038	0.035
Moisture Properties			
Water absorption by immersion to BS EN 12087	≤1%		
Water vapour by diffusion resistance to BS EN 12086	≤1%		

Product Performance and Environmental Properties (Flat Roof Inverted)			
	IKO enertherm EPS 200	IKO enertherm EPS 300	IKO enertherm EPS HP 200
Fire Performance – Euroclass (BS EN 13501-1)	E	E	E
Nominal Density	30kg/m ³	40kg/m ³	30kg/m ³
EPS Rating: BRE Green Guide	A+	A	A+
Ozone Depletion Potential (ODP)	Zero		
Global Warming Potential (GWP)	≤5		
Code for Sustainable Homes; Cat. 6 Pol credit	YES		
BREEAM Compliance	YES		
Board Size	1200 X 1200mm		
Board Minimum Thickness	50mm		
Single Layer Max. Board Thickness	240mm		
Working Temperature Range	-150°C to +80°C		

British and European Code of Practice Compliance			
	IKO enertherm EPS 200	IKO enertherm EPS 300	IKO enertherm EPS HP 200
Compliance ETAG 031	Yes	Yes	Yes
British Board of Agreement Certified	*	*	*
Product Manufacturing Specification	BS EN 13163:2012		
Quality Management System	BS EN ISO 9001:2008		
Environmental Management System	BS EN ISO 14001:2004		

* in progress

IKO enertherm EPS System Components

IKO enertherm EPS WCL (Water Control Layer)

IKO enertherm EPS WCL (Water Control Layer) is a vapour permeable spun-bonded polypropylene membrane which is laid over the IKO enertherm EPS board to minimise the rainwater cooling effect.

IKO enertherm EPS WCL – Membrane Roll Dimensions

Roll Width	3.0m
Roll Length	100m
Thickness	0.45mm

Installation: Loose lay WCL membrane with 300mm overlaps. At upstands and roof projections the membrane must be turned up to finish above the surface of the ballast and turned down at drainage outlets.

This technical datasheet is applied to products sold by IKO PLC and valid until withdrawal or until modification. Since this datasheet may be subject to revision, it is the responsibility of designer/end-user to make sure of possessing the latest version of the datasheet (*see date of issuing). Most recent version of this datasheet can be also accessed under www.ikogroup.co.uk. Modification of the technical datasheet repeals the previously issued versions!

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