

## IKO Enertherm XPS Plus



IKO Enertherm XPS Plus,  
high performance extruded polystyrene insulation.



### Introduction

The high-performance insulation material IKO Enertherm XPS Plus is made of extruded polystyrene foam (XPS). It features outstanding insulation characteristics with  $0.027 \text{ W}/(\text{m}\cdot\text{K})$ , thereby promoting sustainable and energy-efficient building design.

### Thermal Performance and Edge Finish

IKO Enertherm XPS Plus is supplied as a Lap Jointed Board with a 15mm overlap. In accordance with ETAG 031 the design thermal conductivity;  $\lambda_D 0.28 \text{ W}/\text{mK}$ .



### 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.

### Features & Benefits

- Especially well-suited for Inverted roofs, green roofs and blue roofs
- Excellent XPS lambda value of  $0.027 \text{ W}/(\text{m}\cdot\text{K})$
- High compressive strength
- Water resistant
- Available in thicknesses from 50 mm to 320 mm

### Handling & Storage

IKO Enertherm XPS Plus is lightweight and easy to handle and install. 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 roof-lights, 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.

Properties	Declaration/ Unit	Standard	IKO Enertherm XPS Plus														
			50	60	80	100	120	140	160	180	200	220	240	260	280	300	320
Thickness	mm		50	60	80	100	120	140	160	180	200	220	240	260	280	300	320
Nominal thermal conductivity $\lambda_0$	W/(m·K)	EN 13164	0.027														
Thermal resistance $R_0$	m <sup>2</sup> ·K/W	EN 13164	1.85	2.20	2.95	3.70	4.40	5.15	5.90	6.65	7.40	8.10	8.85	9.60	10.35	11.10	11.85
Water vapour diffusion resistance factor $\mu$		EN 12086	140	130	120	110	140	140	140	140	140	140	140	140	140	140	140
Long term water absorption by diffusion, WD(V)	vol %	EN 12088	≤ 3	≤ 2						≤ 1							
Compressive stress at 10% deformation or compressive strength	kPa	EN 826	300														
Permanent compressive strength, creep (50 years, compression < 2%)	kPa	EN 1606	130														
Reaction to fire	Euro class	EN 13501-1	E														
Long term water absorption by total immersion, WL(T)	vol %	EN 12087	≤ 0.7														
Freeze-thaw resistance, FTCD	vol %	EN 12091	--	1													
Dimensional stability at 70°C and 90% relative humidity, DS(70/90)	%	EN 1604	≤ 1														
Deformation under 40 kPa load and 70°C, DLT(2)5	%	EN 1605	≤ 5														
Working temperature range	°C		-50 to +75														
Capillarity			none														
Surface finish			smooth														
Edge profile			shiplap														

IKO Enertherm XPS Plus provides all of the proven properties of XPS thermal insulation: the material has good compressive strength, is dimensionally stable, does not react to moisture, and is rot-resistant.



## IKO Enertherm Plus WCL

IKO Enertherm Plus WCL is used as a filter layer and water flow reducing layer between IKO Enertherm XPS Plus insulation and the roof ballast layer in inverted roofs, including green and blue roof applications.

Length (m)	Width (m)	Area per Roll (m <sup>2</sup> )
100	3.0	300

All dimensions are nominal



### Introduction

IKO Enertherm Plus WCL is a high performance, thermally bonded laminate of polypropylene. It is used in combination with IKO Enertherm XPS Plus as part of the IKO Enertherm system for inverted and green roofs. IKO Enertherm Plus 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		100g/m <sup>2</sup>
Tensile strength in MD	EN 12311-1	189N/5cm
Tensile strength in CD	EN12311-1	132N/5cm
Water resistance	EN 20811	1.5m of water head
Sd-value	EN 12572	0.04

### Handling & Storage

IKO Enertherm Plus WCL is easy to handle and install and can be cut with a knife or scissors. The product may be stored flat or upright on a clean, level surface and should be kept under cover.

### Installation

IKO Enertherm Plus WCL must be laid with 300mm laps, overlapping in the downward direction of the 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.