



IKO enertherm XPS PLUS and WCL PLUS

Technical Data Sheet April 2024

PRODUCT INFORMATION

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

SPECIFICATION

Compressive Strength: IKO enertherm XPS Plus 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 Plus 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.

THERMAL CONDUCTIVITY

In accordance with ETAG 031 the design thermal conductivity; $\lambda_D 0.28 \text{ W/mK}$.

MATERIAL 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.

ENERTHERM XPS PLUS 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.



| Properties | Unit | Standard | IKO Enertherm XPS Plus | | | | | | | | | | | | |
|------------|------|----------|------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
|------------|------|----------|------------------------|--|--|--|--|--|--|--|--|--|--|--|--|

| Thickness | mm | | 50 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 260 | 280 |
|---|---------------------|-----------|------------|-----|------|-----|-----|------|-----|------|-----|-----|------|-----|-------|
| Nominal thermal conductivity | W/(m-K) | EN13164 | | | | | | | | | | | | | |
| Thermal resistance | m ² -K/W | EN13164 | 1.85 | 2.2 | 2.95 | 3.7 | 4.4 | 5.15 | 5.9 | 6.65 | 7.4 | 8.1 | 8.85 | 9.6 | 10.35 |
| Water vapour diffusion resistance | | EN12086 | 140 | 130 | 120 | 110 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 |
| Long term water absorption by diffusion, WD(V) | Vol % | EN12086 | ≤ 3 | | ≤ 2 | | | | | | ≤ 1 | | | | |
| Compressive stress at 10% deformation | kPa | EN826 | 300 | | | | | | | | | | | | |
| Permanent compressive strength, creep (50 years compression at <2%) | kPa | EN1606 | 130 | | | | | | | | | | | | |
| Reaction to fire | Euro class | EN13501-1 | E | | | | | | | | | | | | |
| Long term water absorption by total immersion, WL(T) | Vol % | EN12087 | ≤ 0.7 | | | | | | | | | | | | |
| Freeze-thaw resistance, FTCD | Vol % | EN12091 | - | 1 | | | | | | | | | | | |
| Dimensional stability at 70°C and 90% relative humidity, DS(70/90) | % | EN1604 | ≤ 1 | | | | | | | | | | | | |
| Deformation under 40 kPa load and 70°C, DLT(2)5 | % | EN1605 | ≤ 5 | | | | | | | | | | | | |
| Working temperature range | °C | | -50 to +75 | | | | | | | | | | | | |
| Surface finish | | | Smooth | | | | | | | | | | | | |
| Edge profile | | | Shiplap | | | | | | | | | | | | |

FEATURES AND BENEFITS

- ❖ 15MM lap joint
- ❖ Excellent XPS lambda value of 0.027W/(m2K)
- ❖ High compressive strength
- ❖ Highly resistant to water absorption
- ❖ Able to resist repeated freeze/thaw. cycles
- ❖ Lightweight and easy to install.
- ❖ Available in thicknesses from 50mm to 320mm



IKO ENERTHERM WCL PLUS PRODUCT INFORMATION

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.

| Property | Test | Data |
|------------------------|------------|---------------------|
| Length | - | 100m |
| Width | - | 3.0m |
| Weight | - | 100g/m ² |
| Water resistance | EN 20811 | 1.5m of water head |
| Tensile strength in MD | EN 12311-1 | 189N/5cm |
| Tensile strength in CD | EN 12311-1 | 132N/5cm |
| Sd-value | EN 12572 | 0.04 |



HANDLING AND 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.

READY RECKONER

| U Value W/m ² K | | | | | | | | | | | |
|------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Standard material thickness (mm) | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 300 |
| Enertherm PLUS with ceiling | 0.250 | 0.212 | 0.183 | 0.162 | 0.146 | 0.032 | 0.120 | 0.111 | 0.103 | 0.096 | 0.092 |
| Enertherm PLUS no ceiling | 0.264 | 0.223 | 0.191 | 0.168 | 0.151 | 0.136 | 0.124 | 0.114 | 0.105 | 0.098 | 0.094 |

DISCLAIMER

Whilst every precaution is taken to ensure that the information given in this literature is correct and up to date it is not intended to form part of any contract or give rise to any collateral liability, which is hereby specifically excluded.

IKO reserves the right to amend and/or withdraw this document without notice.

Intending purchasers of our materials should therefore verify with the company whether any changes in our specification, application details, withdrawals or otherwise have taken place since this literature was issued.



IKO PLC

Appley Lane North
Appley Bridge
Wigan
WN6 9AB

IKO PLC

Prospect Quarry
Grangemill
Matlock
DE4 4BW

IKO Polymeric

Coney Green Road
Clay Cross
Chesterfield
S45 9HZ

t: 01257 255771

e: getintouch.uk@iko.com

