

IKO enertherm XPS & WCL

IKO enertherm XPS rigid extruded polystyrene (XPS) insulation.

Thickness (mm)	Product Code	Thermal Resistance (m ² K/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 than five.

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 +70^o 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/m³

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

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

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.

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/m ²
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



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 reveals the previously issued versions!

IKO PLC, Prospect Quarry, Grangemill, Matlock, DE44BW

t: 01257 256 888

gtechnical@iko.com

www.ikogroup.co.uk



SAFETY DATA SHEET

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product name:

All IKO supplied Insulation Boards including: Supertherm and Enertherm brand with PIR, cork, or extruded polystyrene cores and glass tissue, aluminium, polyester faced or un-faced boards

Use/Applications: Insulation
Supplier: IKO PLC
Address Appley Lane North
Appley Bridge, Wigan
Lancashire WN6 9AB

Emergency telephone +44 (0)1257 256864 Opening Times: 0900 - 1700 Monday to Friday

2. HAZARDS IDENTIFICATION

Insulation boards are not hazardous for supply under CLP Regulations. Precautions should be taken to avoid inhaling dust when handling and cutting boards. Handling glass fibre faced boards may cause skin irritation.

3. COMPOSITION / INFORMATION ON INGREDIENTS

None of the ingredients is hazardous in the form supplied and there are no associated WELs. When cutting the boards dust of varying particle size is formed. It is recommended that a maximum exposure limit of 4mg/m³ is adopted for the resulting dust.

4. FIRST AID MEASURES

Skin: In the event of skin irritation through contact with glass fibre, rinse well in running water.
Eyes: Irrigate thoroughly with clean cold water for at least 5 minutes whether affected by glass tissue fibre or dust
Inhalation: Remove from exposure if any ill effects are experienced, rest and keep warm. No significant risk under normal conditions.
Ingestion: No significant risk under normal working conditions.

5. FIRE-FIGHTING MEASURES

The products are combustible and release dense acrid fumes and smoke when they burn. In the event of a fire wear protective clothing. In confined areas wear self-contained breathing apparatus to prevent inhalation of toxic products of combustion. Extinguish fire with foam, dry powder or water spray

6. ACCIDENTAL RELEASE MEASURES

Not applicable

7. HANDLING AND STORAGE

Store away from sources of ignition

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory protection:

The use of a general purpose dust mask (P2 or P3) is recommended when cutting boards

Skin protection:

The use of gloves is recommended when handling boards to protect against irritation from glass fibre faced boards or cuts when handling aluminium faced boards

Eye Protection:

The use of light eye protection is advised to protect against ingress of dust, in the case of foil faced boards UV rated eye protection is recommended

9. PHYSICAL AND CHEMICAL PROPERTIES

Not applicable

10. STABILITY AND REACTIVITY

Stable under normal conditions

11. TOXICOLOGICAL INFORMATION

No hazard in the form supplied



SAFETY DATA SHEET

12. ECOLOGICAL INFORMATION

No information

13. DISPOSAL CONSIDERATIONS

Dispose of waste material as controlled waste in accordance with national and local regulations

14 TRANSPORT INFORMATION

Not classified as hazardous for Road, Rail, Sea or Air Transport.

15. REGULATORY INFORMATION

Not classified as dangerous for supply under the Classification, Labelling & Packaging Regulations.

16. OTHER INFORMATION

We believe all information given is accurate and is offered, in good faith, but without guarantee.

Since conditions of use are beyond our control all risks of use are assumed by the user. Recipients of this MSDS must make their own assessment of the workplace risk as required by other health and safety legislation.
