PROCESSING GUIDELINES FOR FLAT ROOF INSULATION
IKO ENERTHERM ALU/MG/BGF/BM

General guidelines

Storage

The insulation boards should be stored in such a way as to prevent damage. The boards also need to be protected from the weather. If the insulation boards are stored for a longer period, it will be necessary to take measures to protect them from weather conditions such as sunlight.

Procedure

Always work on the insulation boards on a base which is dry and free of dirt. During processing, you need to take measures to prevent damp from penetrating inside the insulation boards. You should allow wet insulation boards to dry before you start work.

IKO Enertherm insulation boards can be fitted in various ways. On a profiled steel roof, fit continuous joints at right angles to the groove direction. With a so-called wild bond, it will be necessary to saw a section at the end of the first row to size. The remaining piece is used as the first element at the start of the second row. Always make sure that the joints are staggered at least 20 cm. With a so-called stretcher bond, you should always use a half-board at the start of the next row. Always fit the insulation boards together with sealed joints.

Any openings between the insulation boards at channels and connections with walls must be sealed using IKO PU FIX GUN once all the boards are fitted. This is necessary to prevent the formation of a thermal bridge. The surplus foam can be cut away and all joints taped with ALU TAPE.

Separate strips

In general, it is true to say that with an adhesive layer to reduce damp and a sealed base, all roof board joints need to be fitted with a separate zone, with a practical minimum of 330 mm. For all roof covering systems with IKO Enertherm ALU / ALU 50, separate strips of at least 500 mm in width always need to be fitted.

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IKO Enertherm product requirements

Paragraph	Assessment aspect	Related requirement Class, level, or specified requirement				Value given by the manufacturer
NEN-EN 13165 4.2.2	Length and width tolerance	-	≤ 1000 ±5mm	≥ 1000 ≤ 2000 ± 7.5mm	≥ 2000 ≤ 4000 ±10mm	In line with requirement
NEN-EN 13165 4.2.3	Thickness tolerance	T2	≤ 50mm ±2mm	≥ 50mm ≤ 75mm ±3%	≥ 75mm + 5mm - 3mm	In line with requirement
NEN-EN 13165 4.2.4	Squareness	-	$S_b \leq 6mm/m$			
NEN-EN 13165 4.2.5	Flatness	-	≤ 0.75 m^2 ≤ 5 mm	≥ 0.75 m^2 ≤ 10 mm		In line with requirement
NEN-EN 13165 4.2.6	Dimensional stability a) 48h 70°C And 90% b) 48h 20°C	DS(70,90)3 DS(-20,-)1		$\Delta\varepsilon_l$	$\Delta\varepsilon_b$	$\Delta\varepsilon_d$	In line with requirement
			a	≤ 2 %	≤ 2 %	≤ 6 %	
			b	≤ 0,5 %	≤ 0,5 %	≤ 2 %	
NEN-EN 13165 4.2.7	Compressive stress at 10% deformation or pressure resistance	CS(10\Y)50	≥ 50 kPa			ALU 175kPa MG 150kPa BGF 150kPa BM 150kPa
NEN-EN 13165 4.3.2	Deformation with specified pressure and temperature charge	Thickness <50mm DLT(1)5 Thickness >50mm DLT(2)5	≤ 5%			In line with requirement
NEN-EN 13165 4.3.3	Tensile strength square to the surface	TR40	≥ 40 kPa			≥ 80 kPa
BRL 1309 7.9	AB pressure reading (if applicable)	-	A: max. + 2mm and - 0mm from middle board B: max. + 0mm and - 3 mm from producer specification			In line with requirement

1) The specification given by the manufacturer is at least equal to, or more than, the related requirement given under class/level/value.
2) DLT(1)5 = 20kPa / 80° c 48h DLT(2)5 = 40kPa / 80° c / 168h.

Packaging

IKO Enertherm roof insulation boards are supplied in packs with foil. The insulation material packs must be stored carefully. If the packs and/or boards are stored outdoors (e.g. on the roof), they must be protected from the weather using a tarpaulin, for instance.

System specifications

General

In general, a roof (from the bottom to the top) consists of:

- support structure (including any slope);
- cover to restrict damp (if applicable) or existing roof cover;
- thermal insulation;
- roof covering system.

Support structure

With new buildings, the condition of the support structure has to comply with the prevailing requirements and stipulations. In the chapter on procedure, the requirements for the various support structures are specified in more detail.

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Non-bearing base
With IKO Enertherm roof insulation boards thickness (d) > 40mm, the maximum overstraining for (b) is 165mm (see figure 1).

Non-bearing ended insulation
For IKO Enertherm roof insulation boards (d) < 50 mm, the maximum permitted overhang is (o) < 110 mm (see figure 1).

Insulation boards with a thickness of < 50 mm always have to be ended to provide support (see figure 1).

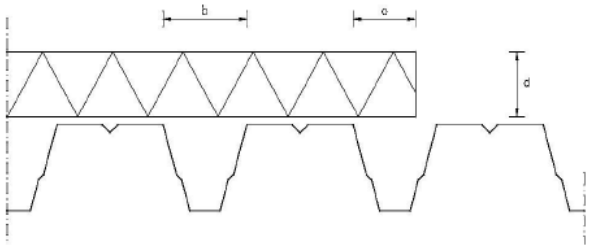


Figure 1

Securing means
With mechanically secured insulation boards, the fasteners and the pressure spread boards are subjected to the requirements and regulations as outlined in the chapter ‘mechanical fastening’. For the fastening systems for the roof covering, we refer you to the guidelines issued by the relevant manufacturer.

Cover to restrict moisture
The cover to restrict moisture must not have any perforations, damage and the like, and must be connected flow-free as required (e.g. flat or upright). Any overlaps need to be stuck together.

Slope
Once the roof covering system is complete, there also has to be a degree of slope to ensure that water can still drain off to the rainwater drains even if the construction sags. A slope of 1.6% is usually sufficient to meet this requirement.

Ballasted systems
IKO Enertherm ALU/MG/BM (1,200 x 600 mm, 1,000mm, and 2,400 x 1,200 x 1,200 mm)
The IKO Enertherm insulation boards can be fitted separately under a ballasted system. If the insulation boards are fitted separately, there has to be enough skyline fixation in accordance with the specification in CTG 485 or those given by the designer.

The ballast layer must be applied directly in conformity to NEN 6707. If this is not feasible for technical reasons, appropriate measures will have to be taken temporarily to ensure sufficient resistance to the wind and prevent excessive thermal charge.

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Adhesive systems
The base must be flat enough to provide for adhesion (no bigger cracks than 5 mm/m1). The base to be glued must be completely dry; glueing in any degree of water is not permitted. Remove any dirt, dust, and loose items from the base, as well as any oil residue and cement. In the case of bases containing oil or greasy bases or existing roof coverings, the possibility of glueing needs to be investigated for each individual situation (e.g. by means of a glueing test). Apply the insulation boards to the base in stretcher bond, partially glued.

On a steel roof with IKO pro-PU adhesive, about 200 g/m² (glue marks left and/or right of the dimple, exclusively in accordance with the manufacturer's guidelines). Then, no more than 15 minutes after applying the PU adhesive (no longer than 5 minutes in temperatures above 30 °C), apply the boards and press them together by running over the surface at least once.

For glueing a partially glued roof covering system onto the insulation boards, apply at least four strokes of adhesive crosswise along the length of the insulation boards (adhesion percentage at least 40%).
For glueing a fully glued system onto the insulation boards with warm bitumen (IKO Enertherm MG/BM), glue at least 50% of the surface. Consumption depends on the application and the manufacturer's specifications.

Mechanical fastening
Fit the IKO Enertherm insulation boards onto the base in stretcher bond; fasten the boards or board sections additionally as follows:

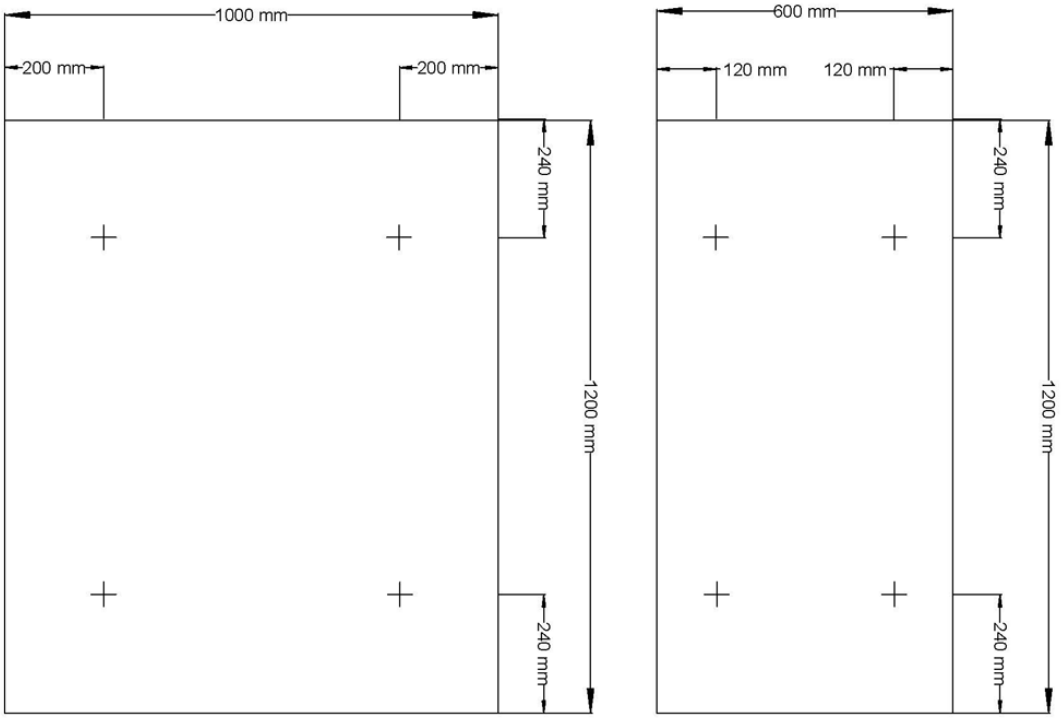
- Board size 1,200mm x 2,400mm - at least 6 fasteners
- Board size 1,200mm x 1,200mm - at least 4 fasteners
- Board size 1,000mm x 1,200mm - at least 4 fasteners
- Board size 600mm x 1,200mm - at least 4 fasteners

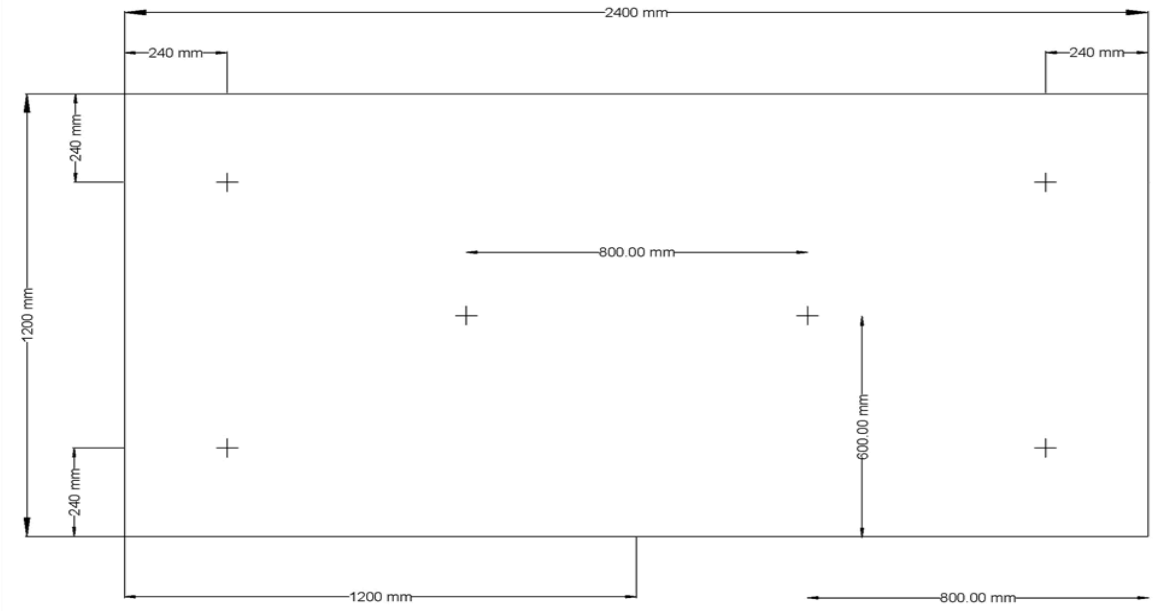
For fastening a wooden or steel roof IKOFIX COMBI-S or IKOFIX EDS-S.
For fastening a concrete roof IKOFIX TLK in combination with IKOFIX EDS-S.

Fasten roof covering systems according to the manufacturer's guidelines.

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