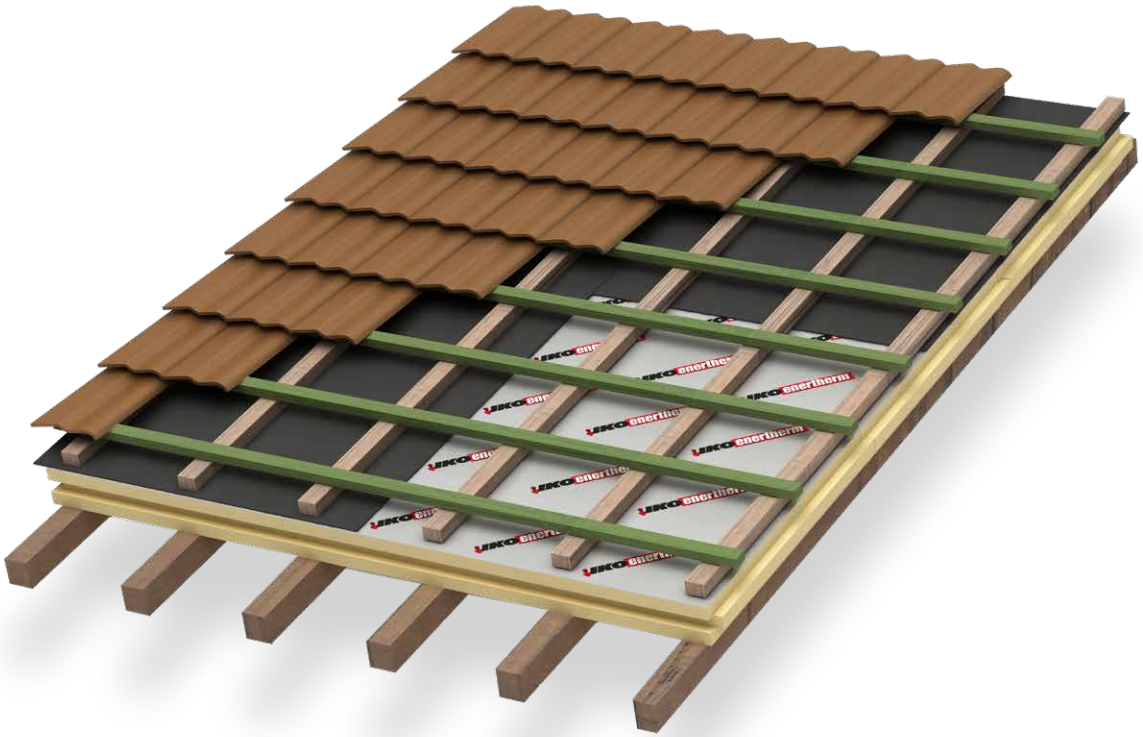
IKO enertherm
sarking



SARKING INSULATION INSTALLATION GUIDELINES

IKO ENERTHERM ALU NF / ALU NF PRO

IKO Insulations

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IKO ENERTHERM ALU NF / ALU NF PRO

General information

IKO enertherm insulation boards are high-quality products for a wide range of insulation solutions. In order to make maximum use of the thermal insulation properties in the application, these installation guidelines must be followed. Always observe the national guidelines and regulations for a correct use with regard to building standards.

Design

Building physics calculation

Before applying the insulation, it is essential to check that the construction is suitable and vapour-permeable. If the existing surface has already been insulated or finished, the existing roof structure must be checked for composition and defects. A building physics calculation for the entire roof structure must first be made by a consultancy in order to exclude condensation problems, and the construction must also be air-tight. Always observe the national guidelines and regulations for a correct use with regard to building standards.

Useful load calculation

Before applying the insulation, it is essential to arrange for the applicable loads to be calculated by an engineering firm. The number of screws depends on the wind load on the roof, the insulation thickness, the roof slope, and the screw diameter. Please contact your IKO adviser for more detailed advice.

Substructure

The roof construction forms the load-bearing structure of the roof and is mainly made up of purlins and rafters or trusses. The specifications and requirements depend on the country where the work is being carried out and are therefore not described in detail here. Ensure that the rafters are wide enough, because assembly needs to be very precise where larger screw and nails may be used.

Installation of insulation

Storage and transport

IKO enertherm boards must be stored in such a way to prevent damage. For optimum performance the boards must be protected against all weather conditions. IKO enertherm insulation boards are pre-packed carefully with a plastic film covering to prevent damage from dust and moisture, in the case of long term storage they should also be protected against direct sunlight.

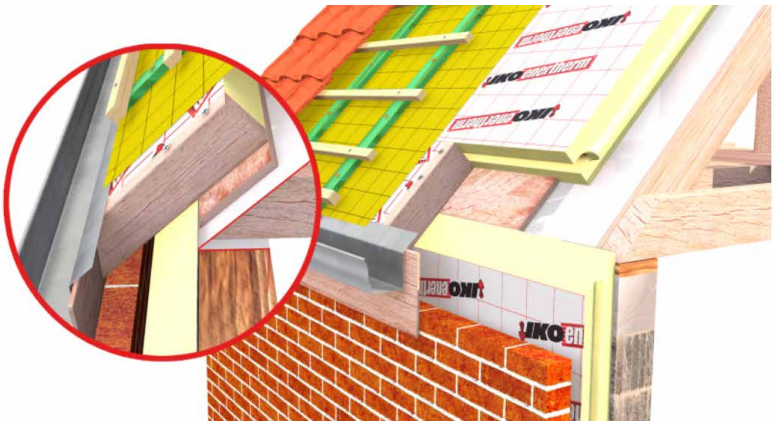
Preparation

Check that the substructure is suitable and dry before starting the works.

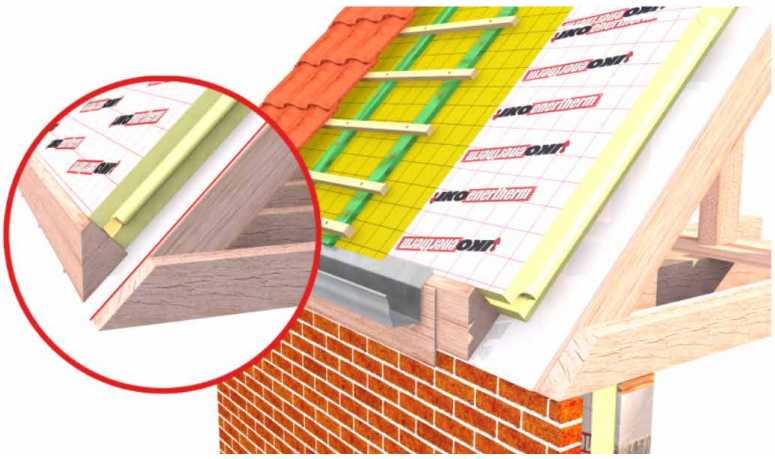
Vapour and air tightness

In order to guarantee the performance of the insulation, and to prevent moisture problems, the roof structure needs to be made air- and vapour-tight in a correct manner by using a suitable air and vapour barrier along the underside of the insulation layer.

A vapour barrier must be fitted before fitting the insulation layer. In the absence of a continuous roof deck, this barrier may be fitted vertically, if necessary, in order to ensure a smoother overlapping join at the rafters.



Connection at the cavity wall with air-tight connection of the vapour barrier against the internal wall (new-build)



Connection at the cavity-wall with continuous vapour barrier down to the eave (renovation)

You can find some practical recommendations for choosing the type of air and vapour barrier and the type of vapour barrier in the national regulations. This choice must always be adapted to the indoor climate class of the building.

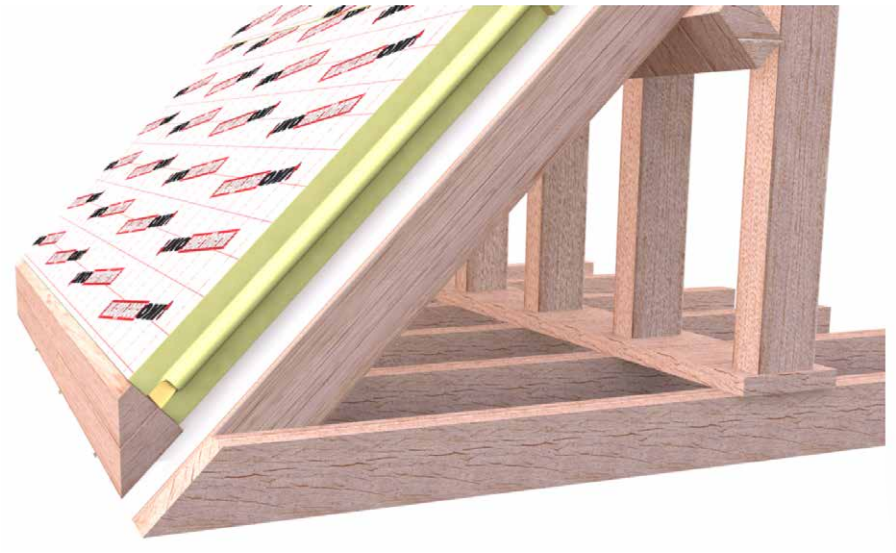
Indoor climate class	I	II	III	IV
Building type	Building with little or no moisture production	Well-ventilated building with limited moisture production	Building with significant moisture production and moderate ventilation	Building with high moisture production
Common examples* (* it is advisable to have a hygrothermal study carried out to determine the indoor climate class)	Workshop, showroom, garage	School, shop, non-air-conditioned office	Home, nursing home, party hall without proper ventilation	Laundry, swimming pool, brewery

Indoor climate class I - IV

The vapour barrier must be joined to surrounding construction elements, gaps and penetrations in a manner that ensures air- and vapour-tightness (for instance by means of a suitable sealant).
Seal any connections between the insulation layer and interruptions (vertical walls, penetrations, purlins, etc.) with the IKO pro Airtight gun and cut away the excess foam.

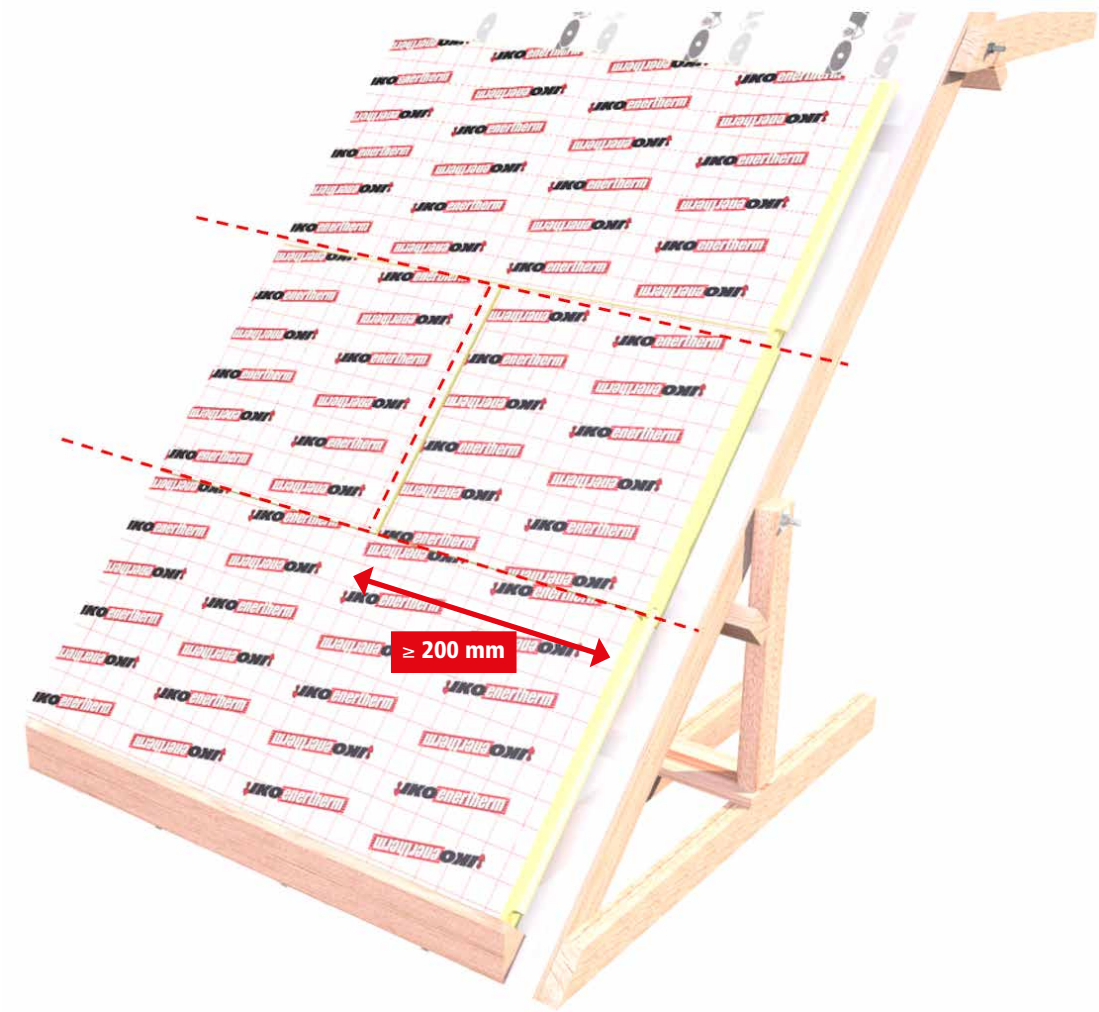
Installation

The following must be observed before fitting roof sarking boards. Use appropriate drawings to determine an exact starting point in order to avoid any unnecessary cutting.
The IKO enertherm ALU NF (PRO) insulation boards are always fitted horizontally on the support structure and rest at the eave against a wooden support rafter(*) (the same thickness as the insulation board), which is fixed to the rafters or trusses. Fix the first row of insulation boards directly onto the rafters or trusses so that they stay properly in place (withstanding wind, vibrations, etc.).

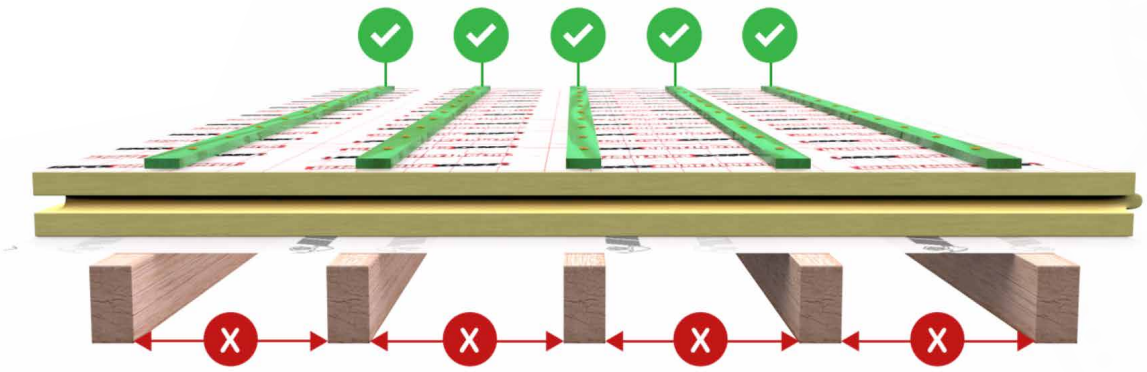


(*) In the absence of a wooden support rafter at the bottom of the insulation layer, it is necessary to pay attention to the correct alignment of the first row of insulation boards; it is also necessary to affix more screws in order to compensate the shearing forces present.

Install the insulation boards from bottom to top with the tongue facing up. Always fit the insulation boards perpendicular and staggered with at least 200 mm between the vertical joints.



The insulation boards cannot be walked upon directly in this application, however, it can be realised by the use of the battens which are installed on top of the insulation layer and breather membrane as shown in the detail below.
The fitting of insulation boards in high winds is not recommended. Always ensure the continuity of the thermal insulation layer at joints and connection points.



Breather membrane

Always fit a breather membrane (IKO enertherm Polyvent) before fitting the counter battens. IKO enertherm ALU NF PRO already comes with a pre-applied suitable breather membrane, saving the installer time and guaranteeing immediate waterproofing. The breather membrane must always continue at the eave down to the gutter or protrude over the outer wall to enable moisture to drain away effectively.

Counter battens and fixing materials

Counter battens are wooden battens which are fixed crossways onto the rafters or trusses through the breather membrane, the insulation, the air/vapour barrier and any supporting floor. They ensure that insulation boards stay fixed on the rafters or trusses and serve as a subsurface for affixing the tile battens.

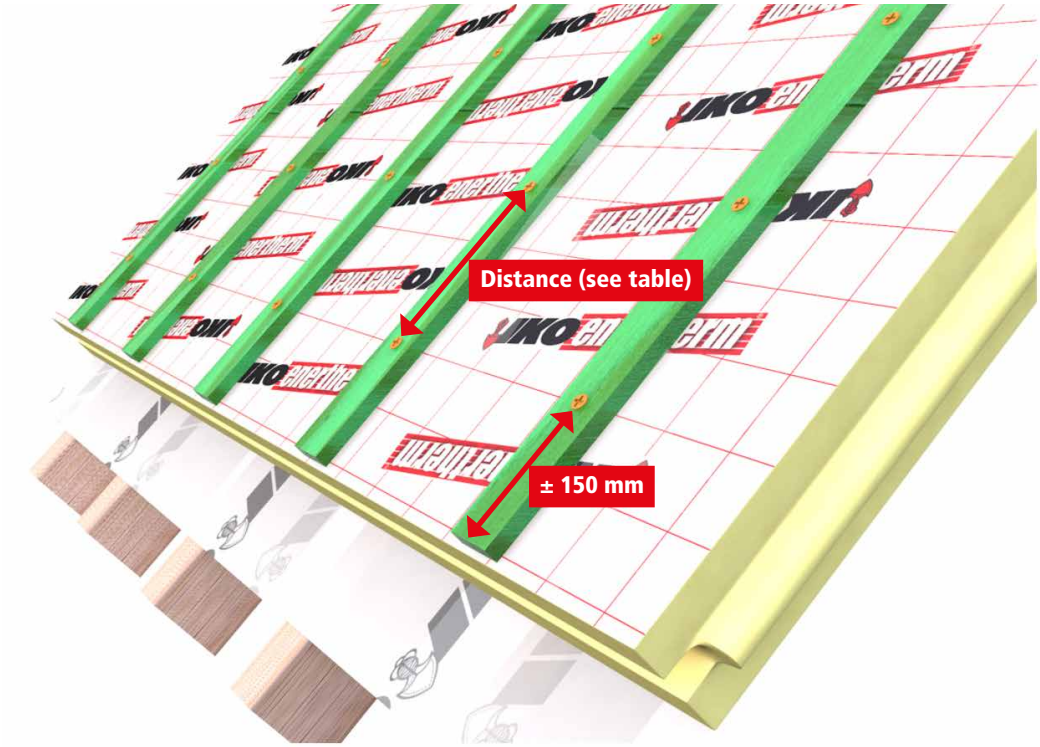
The IKOfix Assy AW 40 screws have been developed for use in affixing IKO enertherm ALU NF and ALU NF PRO. These screws are 8 mm in diameter and vary in length. The length of the screw is determined as follows: thickness of the counter batten + thickness of the IKO enertherm ALU NF or ALU NF PRO + at least 50 mm penetration into the rafter.

Product no	Name	Dimensions	Insulation thickness including wooden counter batten of 30 x 50 mm	
			90° fixing	**60° fixing**
30464160	IKO fix ASSY AW40	8 x 160 mm	80 mm	
30464180	IKO fix ASSY AW40	8 x 180 mm	100 mm	80 mm
30464200	IKO fix ASSY AW40	8 x 200 mm	100 mm	100 mm
30464220	IKO fix ASSY AW40	8 x 220 mm	100 mm	120 mm
30464240	IKO fix ASSY AW40	8 x 240 mm	100 mm	132 mm
30464260	IKO fix ASSY AW40	8 x 260 mm		160 mm
30464280	IKO fix ASSY AW40	8 x 280 mm	May be used with multiple thicknesses	
30464300	IKO fix ASSY AW40	8 x 300 mm	May be used with multiple thicknesses	
30464340	IKO fix ASSY AW40	8 x 340 mm	May be used with multiple thicknesses	

The counter battens are fixed onto the rafters or trusses according to the following guidelines:

- The fixings must penetrate at least 50 mm into the rafters or trusses.
- There must always be a fixing at ± 150 mm from each end of the counter batten, irrespective of its length.
- The minimum width of the rafters or trusses is determined according to Eurocode 5: at least 80 mm without pre-drilled holes and at least 48 mm with pre-drilled holes.
- The dimensions of the counter battens are determined by the screw diameter. Please refer to the national regulations for further details.
- The maximum distance between the fixings of the counter batten depends on the roof slope (see table below).
- Installation according to the manufacturer's specifications.

Roof slope "	Maximum distance between the fixings for rafters spaced 450 to 600 mm apart (in mm)
less than 35°	400 mm
between 35° and 60°	330 mm
greater than 60°	200 mm



Roof carpentry and roof covering materials

The roof covering materials, the roof woodwork, and the various accessories and their respective fitting methods must comply with the requirements of the relevant Technical Guidelines and the manufacturers' guidelines.

Interior finish

The composition and properties of the interior finish are determined by the final use of the building and will closely depend on aesthetic criteria and fire safety requirements. All finishing materials must be affixed to counter battens to counter or profiles according to the manufacturer's specifications.

For detail drawings, please see our website www.enertherm.eu

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