

# ISOROOF

## Roof Sarking Board and External Wall Insulation Board behind a Ventilated Façade



Construct. Insulate. Relax.



### IsorooF Characteristics

Produced According to EN 13171

**IsorooF** water resistant, but breathable, wood fibre thermal insulation panels are used as sarking boards to externally insulate the roof or walls due to their high compression strength. They are laid above the rafters and below the roof covering or externally on walls behind a ventilated façade, to significantly reduce thermal bridging through the junctions because the entire building envelope is insulated. This greatly helps towards meeting the current, stricter Building Regulation requirements, especially when Y-values for thermal bridging are taken into account. Additional insulation e.g. Pavatherm Combi can also be fitted below or behind the IsorooF layer if required, or alternatively the flexible, breathable Pavaflex wood fibre insulation can be fitted between the rafters or wall studs to meet U-value requirements. IsorooF wood fibre boards also enhance airborne and impact sound insulation within the building.

IsorooF has a high heat capacity and a long thermal lag time which means that it naturally keeps buildings warmer in winter and cooler in summer in all climates. When comparing wood fibre insulation with conventional insulation products which have the same thermal conductivity value, the wood fibre will work much more effectively. The building will remain at a more ambient, comfortable temperature all year round, because the excess heat will be stored in the wood fibre, and released slowly as the temperature drops. This high thermal mass capacity is critical for external walls in lightweight buildings e.g. timber or metal frame constructions, but also for all roofs which do not have high thermal mass, especially when the attic space is to be used as living accommodation.

Due to its very favourable Vapour Diffusion Factor, IsorooF allows water vapour to be safely drawn away from inside to outside as well as protecting the structure from external moisture. The condensation will not get trapped in the middle of the structure which could cause mould growth, wet rot or dry rot. The IsorooF wood fibre sarking board can be left exposed on roofs and walls for up to three months without compromising the integrity of the thermal insulation product (except during heavy snow loads).

Thanks to a very good Sd value (water vapour diffusion equivalent air layer thickness) of 0.1M (5  $\mu$  x 0.02 M) for 20mm thick IsorooF panels, they are ideal for all vapour-open constructions. These very low values indicate how vapour permeable the build-up of a roof or wall will be. This should be compared to other insulation products e.g. 20 mm thick rigid polyurethane foam or polystyrene insulation boards which have an Sd value of between 1.2M (60  $\mu$  x 0.02 M) and 3M (150  $\mu$  x 0.02 M) and so are not breathable and may cause mould, interstitial condensation, wet rot or dry rot.

The CE marked IsorooF wood fibre board guarantees an ecological, breathable and durable structure, which will protect the property for many decades. They are also BBA certified for both pitched roof and cladded wall systems.

**IsorooF Sarking Boards – Water resistant: 20 and 35mm thick**

**Pavatherm-Combi Sarking Boards – Not very water resistant: 40, 60 and 80mm thick**

**Isolair Sarking Boards – Water resistant: 100, 120, 140, 160, 180 and 200mm thick**

**Pavatherm-Plus Sarking Boards – Water resistant: 60, 80, 100, 120, 140 and 160mm thick**

### IsorooF

Thickness (mm)	Weight (kg / m <sup>2</sup> )	Overall Board Size (cm)	Coverage Area (cm)	Number of Boards	M <sup>2</sup> per Pallet - Coverage	KG per Pallet	Edge Profile
20	4.80	250 x 77	248 x 75	56	104.16	511	Tongue & Groove
35	7.20	250 x 77	248 x 75	30	55.80	470	Tongue & Groove

Technical Details	IsorooF	
	20 mm	35 mm
Density (kg / m <sup>3</sup> )	240	230
Declared Thermal Conductivity $\lambda$ D (W/mK)	0.047	0.046
Vapour Diffusion Factor $\mu$	5	5
Specific Heat Capacity - C (J/kgK)	2100	2100
Tensile Strength Perpendicular to Plane of Board (kPa)	30	10
Compressive Stress at 10% Compressive Deformation (kPa)	180	150
Fire Behaviour (EN 13501-1)	Class E	Class E

## Application

### Roof Insulation Panels

IsorooF safely seals and protects the roof construction when it is laid down above the rafters, ensuring a dry building for the construction work to continue. IsorooF can be used on both new build and renovation projects. There is no requirement to use a vapour control membrane but an airtightness membrane or airtight OSB board should be placed internally under the roof. For water tightness, seal all cut or exposed IsorooF board edges, penetrations, ridges and corners with Pavatex Primer and Pavatape.

On roof pitches  $\geq 18^\circ$ , there is no need to tape over tongue and groove joints, as these will be weathertight.

On roof pitches  $\geq 10^\circ$  and  $< 18^\circ$ , a bead of Pavatex System Glue must be applied onto the upper face of each tongue before it is inserted into the next board.

On roof pitches  $\geq 5^\circ$  and  $< 10^\circ$ , the complete roof surface must be covered with a sealed breather membrane.

Do NOT use IsorooF on roofs with pitches of less than  $5^\circ$ .

### External Wall Insulation

IsorooF is used in timber frame constructions as an external wall sarking board, but the boards cannot be rendered to directly. The panels provide water resistance for the timber construction behind the ventilated cladding façade, with excellent vapour permeability. However IsorooF cannot be fixed below the Damp Proof Course level so waterproof insulation such as XPS should be used in this area. An airtightness membrane or racking board incorporating an airtightness detail should be inserted on the internal side of the timber frame.

If IsorooF is being used as a sarking board behind ventilated cladding on a masonry wall, the wall must be dry and reasonably flat. If it is quite uneven, the masonry wall must first be levelled with a Pavatex lime parge coat, so that the boards adjoin neatly together. Should the existing render be broken away in parts, be in poor condition or have a high cement content it should be removed. Also the Isolair boards should be sealed against the wall at all the perimeter edges with expanding foam tape to avoid any water or wind ingress.

### Installation

IsorooF panels should be fixed directly over the rafters or studs with the tongue facing upwards towards the apex. The cut-off piece at the end of one row should be used as the first piece on the next row so that the joints are in a brickwork formation. This will increase the structural strength. All openings, corners and penetrations should be primed and taped with Pavatex Primer and aluminium butyl Pavatape to ensure the integrity of the wood fibre insulation. On roofs, battens and counter-battens are placed above the IsorooF to create adequate ventilation and to provide a structure for the roof covering. When working on the roof, only walk above the rafters rather than between the rafters. On walls, secure vertical battens to the IsorooF to create a ventilated façade.

### Fixing into Timber Frame and Masonry Constructions

Please seek our advice regarding suitable fixings for the required application. Fixings are inserted through the battens, the IsorooF board and into the timber structure so that it is anchored into the timber by at least 40 mm. Generally 6 fixings are required per m<sup>2</sup>. On masonry walls, fixings are typically embedded by at least 50mm, and again there are generally 6 fixings per m<sup>2</sup>.

### Cutting and Storing the Wood Fibre Softboards

The panels can be cut with normal timber cutting tools e.g. a jigsaw with Pavatex blades or a circular saw. If a hole or gap occurs in the wood fibre due to a construction error, ensure that it is filled in with wood fibre offcuts and prime and tape this area to prevent water ingress. Keep the boards dry when in storage and protect from damage. Do not stack any more than 4 pallets on top of each other.



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