PAVATHERM

Wood Fibre Insulation for CLT and Internal Use on Stud Walls, Floors and Ceilings

pavatex

Construct. Insulate. Relax.

Pavatherm Characteristics

Produced According to EN 13171

Pavatherm wood fibre thermal insulation softboards are ideal to use externally over CLT (cross laminated timber) and glulam buildings. They can be protected with the ADB Breather Membrane or Isolair wood fibre boards to ensure that they are water resistant.

Pavatherm boards also have a variety of interior uses, for example they can be used flush against rafters and stud walls, as well as insulating the cavity between the rafters, studs and suspended floor joists. However because the 40-120mm thick boards are square edged, they are best used in combination with a tongue and groove wood fibre board to ensure a wind-tight and improved thermal performance when used flush against studs and rafters. The thicker 140 – 200mm boards have shiplapped edges though. Thanks to their high density they also improve the acoustic insulation of walls, suspended floors, ceilings and roofs. When the Pavatherm insulation panels are fixed flush to the inside of studs or rafters they will significantly reduce thermal bridging through the timber elements and so will save on energy costs.

Pavatherm boards are natural, highly vapour-open rigid insulation boards with a high thermal mass and a long thermal lag time. This means they keep buildings warmer in winter and cooler in summer in all climates. Pavatherm has a specific heat capacity of 2100 J/kgK which is very favourable compared to mineral wool (800 J/kgK approx) or expanded polystyrene insulation (1400 J/kgK approx). It is very important to take summer heat protection into account particularly if the attic space of a house is to be used as a living or working space or if the property has a lot of south facing glazing which often contributes to excess solar gain during the warm weather. 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.

Pavatherm insulation boards, with a vapour diffusion factor of μ = 3, are open to diffusion and ensure effective water vapour transmission through the structure, to provide a comfortable, healthy living space. The condensation will not get trapped in the middle of the structure which could cause mould growth, wet rot or dry rot.

Pavatherm

Thickness (mm)	Weight (kg / m²)	Board Size (cm)	No. Boards Per Pallet	M² per Pallet	KG per Pallet	Edge Profile
40	4.6	110 x 60	112	73.92	360	Square Edge
60	6.9	110 x 60	72	47.52	348	Square Edge
80	9.2	110 x 60	56	36.96	360	Square Edge
100	11.5	110 x 60	44	29.04	354	Square Edge
120*	13.8	110 x 60	36	23.76	348	Square Edge
140*	16.1	108.5 x 58.5	32	20.31	360	Shiplap
160*	18.4	108.5 x 58.5	28	17.77	360	Shipap
180*	20.7	108.5 x 58.5	24	15.24	336	Shipap
200*	23.0	108.5 x 58.5	20	12.70	324	Shipap

*** Available in full pallets only and allow 6-8 weeks for delivery**

Technical Details	Pavatherm
Density (kg / m³)	110
Declared Thermal Conductivity λ D (W/mK)	0.038
Vapour Diffusion Factor μ	3
Specific Heat Capacity - C (J/kgK)	2100
Tensile Strength Perpendicular to Plane of Board (kPa)	2.5
Compressive Stress at 10% Compressive Deformation (kPa)	50
Fire Behaviour (EN 13501-1)	Class E

Application

Insulating Cross Laminated Timber (CLT) Buildings Externally

It is strongly recommended to insulate CLT and glulam buildings from the outside so that the complete building structure is insulated. This will greatly diminish the risk of heat leakage through the junctions, such as where the wall meets the roof, and in the corners. The square edged Pavatherm wood fibre boards can be used for this purpose but because they are not water resistant, they must be covered over straight away with either the water resistant Pavatex Isolair sarking boards or with the Pavatex ADB Breather Membrane. Due to excellent Y-Values as a result of the thermal bridges being totally insulated, and good airtightness, the Building Regulations will be easier to meet with less stringent U-Values than if the thermal bridging was not addressed. This means that a thinner building frame can be used saving costs. The square cut edges of the Pavatherm (40 – 120mm) boards means that it is the most economical of all the wood fibre boards. It also has a very good thermal conductivity of 0.038 W/mK.

Insulating Roofs and Stud Walls Internally

Pavatherm can be installed below the roof rafters or to the inside of timber or metal stud walls in renovation projects, to very effectively reduce the risk of thermal bridging. It will supplement the cavity insulation to provide lower U-Values. In addition the Y-Values will be improved due to addressing the thermal bridging and this combined with good airtightness will help to achieve Building Regulation requirements. However the square edged Pavatherm boards need to meet on a rafter or stud, so an alternative T&G wood fibre board may provide less wastage. Pavatherm can also be placed in between the rafters or studs, if cut carefully to ensure a snug fit. This will provide excellent airborne sound insulation too. Pavatherm must be finished with plasterboard or a similar finishing board – if a plastered finish is required, Pavatherm-Combi or Isolair can be used instead. The CE marked Pavatex wood fibre insulation panels are made from new timber off-cuts sourced from local PEFC and FSC certified sawmills. The wood fibre boards will not emit any toxic chemicals into the interior environment as denoted by their Natureplus certification and they are carbon negative, which means that during their lifetime, they will store more carbon dioxide than they will emit during their manufacture, shipping and disposal.

Pavatherm wood fibre will protect the property from overheating during summer-time which is particularly critical in buildings where the loft space is used for living accommodation and in dormer bungalows, as well as in buildings with lots of south facing windows. In addition, the sound insulation of the building fabric will be greatly enhanced.

If internally insulating masonry walls, we recommend using Isolair (40mm +) or Pavadry (51 or 91mm) which are specifically made for this purpose.

Insulating Timber Joist Floors

Pavatherm can be used to insulate between the joists of suspended timber or metal joist floors as well as below the joists so long as there is a ventilation space below it, to ensure that the water vapour can be released. The dense wood fibre boards will also reduce airborne noise transmission through floors. Pavatherm does not have enough compression strength though to use on top of floors. It is not recommended to use wood fibre insulation boards over concrete ground floors as there will be no ventilation space to allow to allow the absorbed water vapour to evaporate.

Cutting and Storing the Wood Fibre Softboards

The panels can be cut with normal timber cutting tools e.g. a jigsaw, circular saw or reciprocating saw with Pavatex blades. It is recommended to use suction equipment to minimize dust. If a hole or gap occurs in the wood fibre due to a construction error, ensure that it is filled in with wood fibre pieces. 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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