NATURHELD 100/110

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

Naturheld 100/110 Characteristics

Produced According to EN 13171

Naturheld 100/110 wood fibre thermal insulation softboards are ideal to use externally over CLT (cross laminated timber) and glulam buildings. The wood fibre boards can be protected with the **Ampack Ampatop Protecta plus Breather Membrane** to ensure that the structure remains water-resistant, when finished with ventilated cladding or roof tiles. Alternatively, the Naturheld 110 boards only can be rendered with breathable Baumit render, when fixed to CLT.

Naturheld 100/110 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. The 40-200mm thick boards come in a variety of square-edged and tongue and groove options. The tongue and groove wood fibre boards are recommended over studs and rafters as they will ensure a wind-tight and improved thermal performance. Thanks to their high density, they also improve the acoustic insulation of walls, suspended floors, ceilings and roofs.

Naturheld 100/110 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. Naturheld 100/110 have 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.

***Longer Lead Times**

Thickness (mm)	Weight (kg / m²)	Overall Board Size (cm)	Coverage Area (cm)	No. Boards Per Pallet	KG per Pallet	Edge Profile
Naturheld 100						
40*	4.0	125 x 60	125 x 60	56	198	Square Edge
60*	6.0	125 x 60	125 x 60	38	201	Square Edge
80*	8.0	125 x 60	125 x 60	28	198	Square Edge
Naturheld 110						
60*	6.6	188 x 61.5	185.6 x 59.1	38	305	T&G
80*	8.8	188 x 61.5	185.6 x 59.1	28	300	T&G
100*	11.0	188 x 61.5	185.6 x 59.1	22	295	T&G
120*	13.2	188 x 61.5	185.6 x 59.1	18	291	T&G
100	11.0	120 x 40	120 x 40	33	204	Square Edge
120	13.2	120 x 40	120 x 40	27	201	Square Edge
140	15.4	120 x 40	120 x 40	24	207	Square Edge
160	17.6	120 x 40	120 x 40	21	207	Square Edge
180	19.8	120 x 40	120 x 40	18	201	Square Edge
200	22.0	120 x 40	120 x 40	15	188	Square Edge

Technical Details	Naturheld 100	Naturheld 110
Density (kg / m³)	100	110
Declared Thermal Conductivity λ D (W/mK)	0.038	0.039
Vapour Diffusion Factor μ	3	3
Specific Heat Capacity - C (J/kgK)	2100	2100
Tensile Strength Perpendicular to Plane of Board (kPa)	≥ 10	≥ 15
Compressive Stress at 10% Compressive Deformation (kPa)	≥ 50	≥ 50
Fire Behaviour (EN 13501-1)	Class E	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 **Naturheld 100/110** wood fibre boards are ideal for this purpose, but they must be protected with the **Ampack Ampatop Protecta plus Breather Membrane,** if the walls and roof are being finished with ventilated cladding or roofing. The Naturheld 110 Boards only can be rendered directly if installed over a solid surface. Due to excellent Y-Values, resulting from 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 Naturheld 100/110 boards are the most economical of all the wood fibre boards. They also have very good thermal conductivity values of 0.038 and 0.039 W/mK respectively.

Insulating Roofs and Stud Walls Internally

Naturheld 110 boards with T&G can be installed below the timber 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. Naturheld 110 boards cannot be plastered directly when installed on to studs as they are not dense enough, but they can be finished with plasterboard or a similar finishing board. Naturheld 100/110 can also be placed between the rafters or studs, if cut carefully to ensure a snug fit. The CE-marked Naturheld wood fibre insulation panels are made from new timber off-cuts sourced from local PEFC certified sawmills. The wood fibre boards will not emit any toxic chemicals into the interior environment, 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.

Naturheld 100/110 vapour-open 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 solid masonry walls, we generally recommend **Naturheld 140/180** boards which are more suited for this purpose.

Insulating Timber Joist Floors

Naturheld 100/110 can be used to insulate between the joists of suspended timber joist floors, as well as below the joists, so long as there is at least 150mm of ventilation space below the boards, to ensure that the water vapour can be released. The dense wood fibre boards will also reduce airborne noise transmission through intermediate floors. Naturheld 100/110 boards do not have enough compression strength though to use on top of floorboards. Wood fibre insulation boards should not be used over solid ground floors as there is no ventilation space 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. 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 2 pallets on top of each other.

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