

PAVADENTRO

Internal Wall Insulation Board that can be Plastered Directly - IWI



Construct. Insulate. Relax.



Pavadentro Characteristics

Produced According to EN 13171

Pavadentro Internal Wall Insulation (IWI) is the optimal ecological insulation for interior walls, due to its wood fibre structure and very effective hygroscopic properties. Pavadentro contains a unique mineral layer within the board which ensures controlled moisture transfer so that a vapour membrane can be omitted. It actively exploits capillary conductivity and the hygroscopic properties of wood fibres to prevent the formation of damaging moisture. Pavadentro insulation board can be plastered directly with breathable or diffusion-open plasters e.g. lime, clay and mineral based plasters.

These breathable, hygroscopic, natural insulation boards can absorb moisture from inside the room and then release it either back into the room or out through the walls as the humidity level lowers, without any detrimental effects to the integrity of the insulation boards. This avoids condensation, mould growth and humidity in buildings and creates a very pleasant, comfortable interior climate. Interstitial condensation will not get trapped in the structure which can cause untold damage.

In particular this product plays an important role in the maintenance and repair of older and historic buildings, where the external appearance must be preserved and so cannot be thermally upgraded with the addition of external wall insulation. Heritage and period buildings are usually constructed from vapour-open materials such as stone, brick, timber frame, cob or wattle and daub with lime or earth mortar in the joints, and lime plaster, render or paint on the walls. All of these materials are breathable and so allow moisture to pass through them and then this moisture evaporates either externally or internally. This keeps the building dry because externally the heat from the sun and the wind will dry out the building fabric and internally the moisture will evaporate as a result of ventilation from air circulating around the building which comes in through the windows, doors, chimneys and roof eaves. It is critical to observe the breathability of these older buildings by using breathable insulation, plaster and paint so that interstitial condensation will be hindered.

Summertime overheating is often a problem in timber and metal framed buildings and in contemporary buildings which have a lot of south and west facing glazing. Wood fibre is the densest and has the highest thermal capacity ($c = 2,100 \text{ J/kgK}$) of all insulation materials which means that it adds thermal mass to the building which protects the interior living space from overheating. The heat from the sun is stored in the wood fibre for as much as 10-12 hours when it will then be released as temperatures drop, whereas other insulation materials can only provide 5-8 hours lag time. Likewise the internal heat during the winter will be stored during the day and will then be released at night-time as the building cools.

Pavadentro

Thickness (mm)	Weight (kg / m ²)	Overall Board Size (cm)	Coverage Area (cm)	No. Boards per Pallet	M ² per Pallet Coverage	KG per Pallet	Edge Profile
40	7.0	102 x 60	101 x 59	100	59.59	446	Tongue & Groove
60	10.5	102 x 60	101 x 59	68	40.52	455	Tongue & Groove
80	14.0	102 x 60	101 x 59	48	28.60	429	Tongue & Groove
100	17.5	102 x 60	101 x 59	40	23.84	446	Tongue & Groove

Pavadentro Reveal Board

Thickness (mm)	Weight (kg / m ²)	Overall Board Size (cm)	Coverage Area (cm)	No. Boards per Pack / per Pallet	M ² Per Pack / per Pallet	KG per Pallet	Edge Profile
20	3.6	120 x 60	120 x 60	8 / 96	5.76 / 69.12	264	Square Edge
40	7.2	120 x 60	120 x 60	4 / 48	2.88 / 34.56	264	Square Edge

Technical Details	Pavadentro
Density (kg / m ³)	175
Declared Thermal Conductivity λ D (W/mK)	0.043
Vapour Diffusion Factor μ	5
Specific Heat Capacity - C (J/kgK)	2100
Tensile Strength Perpendicular to Plane of Board (kPa)	5
Compression Strength at 10% (kPa)	70
Fire Behaviour (EN 13501-1)	Class E
Building Material Class (DIN 4102-1)	B2
Waste Code According to European Waste Catalogue	030105 - 170604
Identification Code	WF-EN13171-T5-CS(10/Y)70-TR5-AF100

Application

Pavadentro panels must be mounted onto dry, flat, even walls. If the surface is bare or uneven the walls must first be plastered and levelled with a breathable lime plaster, because air gaps behind the wood fibre may cause interstitial condensation. Any cement based plaster or oil based paints on the walls must first be removed before the walls are levelled with lime plaster. If applying onto solid or uneven walls please seek our advice for the optimum application method. The boards are bonded to the wall using a lime bonding coat called RK70 and the boards should be fitted with the green mineral functional layer closest to the wall. Pavadentro boards are fitted vertically, starting at the bottom corner of the wall, with a straight edge butted tightly up to the adjacent wall. The panels must be fitted as tightly as possible to each other so that they only have the smallest possible gaps between them. The second row should begin with the cut-off piece from the previous row so that the boards form a brickwork pattern. The vertical joints must be staggered by a minimum of 200mm so as not to weaken the strength of the system.

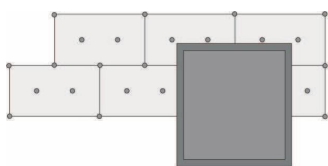
The panels can be cut with normal timber cutting tools e.g. a circular saw or reciprocating saw. It is recommended to use suction equipment to minimize dust. If a hole or gap occurs in the wood fibre due to a construction error, ensure that it is filled in with wood fibre pieces. Keep the boards dry when in storage and protect from damage. Do not stack more than 4 pallets on top of each other.

Fixing into Masonry Construction

Ejot NT-U plastic insulation screw fasteners are inserted into the Pavadentro board until they are flush with the surface. They must be anchored into the masonry substrate by at least 35 mm excluding the plaster layer. As a general rule each board is secured by placing 3 plastic fasteners minimum into each board in addition to the bonding layer. The fixings are optimally placed at 100mm from the edge of the board.

Fixing into Timber Frame Construction

60 mm diameter plastic insulation screw fasteners or premium wide steel staples are inserted into the Pavadentro board until they are flush with the surface. They must be anchored into the timber frame by at least 40 mm and generally a minimum of 3 screw fasteners or 12 staples are required per board.



The boards should not align with the corners of the windows or doors as it will weaken the strength of the Pavadentro system – see the drawing. The door and window reveals must be insulated too to prevent cold bridging. There must be an airtight fit between the window or door frame and the reveal so prime and tape this junction before the Pavadentro system is installed.

Lime or Clay Plaster

With Pavadentro panels, the capillary force is oriented toward the inside surface. As a consequence of its accumulating abilities, most of the water vapour that is stored in the board returns to the interior environment where it evaporates. For this reason, lime or clay-based plaster that is capillary conductive is ideal to use with Pavadentro boards. Please consult Acara Concepts for advice on applying the plaster and mesh system.



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