PAVADENTRO

Internal Wall Insulation Board that can be Plastered Directly – IWI Retrofit

pavatex

Construct. Insulate. Relax.

Pavadentro Characteristics

Produced According to EN 13171

Pavadentro Internal Wall Insulation (IWI) is the optimal ecological insulation for the inside of external 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 or mineral based plasters. Lime plaster is alkaline and alkaline surfaces also inhibit mould growth.

These breathable, hygroscopic and capillary active 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 externally insulated. 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.

When insulating solid masonry walls internally it is not recommended to achieve a U-Value of less than 0.4 W/m²K as this will negatively affect the speed of drying in the solid wall. If a single leaf solid wall is over-insulated internally the wall then becomes colder (as a result of less heat from inside the building getting through the insulation) and this increases the risk of interstitial moisture building up in the wall. For extra reassurance, Pavatex can provide a detailed assessment of the finished construction using a very advanced dynamic moisture assessment programme called WUFI.

Pavadentro

Thickness (mm)	Weight (kg / m²)	Overall Board Size (cm)	Coverage Area (cm)	No. Boards per Pallet	M² per Pallet Coverage	KG per Pallet	Edge Profile
40*	7.0	102 x 60	101 x 59	112	66.74	500	Tongue & Groove
60*	10.5	102 x 60	101 x 59	72	42.90	483	Tongue & Groove
80	14.0	102 x 60	101 x 59	56	33.37	500	Tongue & Groove
100	17.5	102 x 60	101 x 59	44	26.22	491	Tongue & Groove

*** Available in full pallets only. We recommend using Pavatherm-Profil for 40 and 60mm thicknesses. It is a very similar product.**

Pavadentro Reveal Board

Thickness (mm)	Weight (kg / m²)	Overall Board Size (cm)	Coverage Area (cm)	No. Boards per Pallet	M² per Pallet	KG per Pallet	Edge Profile
20	3.6	110 x 60	110 x 60	96	63.36	249	Square Edge
40	7.2	110 x 60	110 x 60	48	31.68	249	Square Edge

Technical Details	Pavadentro
Density (kg / m³)	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
Compressive Stress at 10% Compressive Deformation (kPa)	70
Fire Behaviour (EN 13501-1)	Class E

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 between the wall and the wood fibre may cause interstitial condensation. Any cement based plaster or oil based paints on the walls must 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 plastered or level wall using a lime bonding coat called Baumit RK70 and the boards should be fitted with the green mineral functional layer closest to the wall. Airtightness will be provided by the lime levelling coat and lime bonding coat so long as they are at least 8 mm thick. Airtightness tape must also be used at junctions between the window and door frames and the wall. Begin fitting Pavadentro boards in 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 200 mm so as not to weaken the strength of the system.

The wall in the intermediate floor space should also be lime plastered and insulated with Pavadentro, if at all possible. If there is not enough space for Pavadentro then insert 50mm Pavaflex flexible insulation in the space instead. If the floor joists are embedded into the wall, firstly prime and tape around these junctions to provide airtightness.

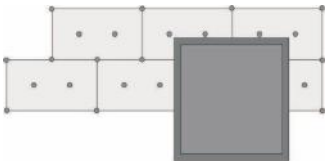
The panels can be cut with normal timber cutting tools e.g. a circular saw or hand saw. It is recommended to use suction equipment to minimize dust or to wear a dust mask. If a hole or gap occurs in the wood fibre due to a construction error, ensure that it is filled in with wood fibre pieces. Keep the 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 H3 plastic insulation hammer-in fixings are used to secure the Pavadentro boards to solid masonry walls. They must be anchored into the masonry substrate by at least 35 mm excluding the plaster layer. If the walls consist of crumbly or rubble masonry use Ejot STR-U fixings and embed them by 35-65 mm excluding the plaster. As a general rule use 3 fixings per board in addition to the bonding layer. The fixings are optimally placed at 100 mm from the edge of the board.

Fixing into Timber Frame Construction

Ejot STR-H fixings with a 60mm diameter plastic washer are used to secure Pavadentro boards into timber or sheet steel. They must be anchored into the timber frame by at least 40 mm.



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 so lime or clay-based plaster that is capillary conductive is essential to use with Pavadentro boards. Please consult Acara Concepts for advice on applying the two coat Baumit lime plaster and mesh system. A traditional, slightly coarse lime finish or a smooth modern finish are both available to suit any interior design.

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