PAVADRY

Internal Wall Insulation Board with a Plasterboard Finish – IWI Retrofit

pavatex

Construct. Insulate. Relax.

Pavadry Characteristics

Produced According to EN 13171

Pavadry Internal Wall Insulation (IWI) is an innovative, natural wood fibre insulation board for insulating the inside of external masonry walls, especially in refurbishment and conservation projects. Pavadry consists of the vapour-open, hygroscopic and capillary active Pavatherm-Combi wood fibre board bonded to an 11mm OSB3 surface. The OSB surface faces into the room enabling plasterboard or Fermacell to be fixed securely to it, thereby speeding up the installation process. It also means that heavy objects such as radiators or curtain poles can be hung off the plasterboard and OSB board without the need for the fixing to penetrate the original wall, so thermal bridging is reduced. A services void can be installed between the Pavadry and plasterboard if required by securing battens to the Pavadry boards. This dry insulation system introduces less moisture into the building so curing time will be quicker.

The Pavadry system is very effective when used on solid or cavity masonry walls due to its excellent ability to absorb moisture from both the moist internal air and from the wall. Critically, Pavadry can also release this water vapour or water droplets back out into the atmosphere as relative humidity changes, due to its excellent hygroscopic and capillary active properties. This means that the wall will be much drier than if it had been sealed with a vapour barrier and vapour-closed insulation, and therefore it will perform significantly better thermally. A dry wall is a warm wall. This ability of absorbing and releasing moisture avoids condensation, mould growth and humidity in buildings and creates a very healthy, 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 traditional buildings, where the external facade must be preserved and cannot be altered by installing external wall insulation. Heritage and period buildings are usually constructed with solid walls made from vapour-open materials such as stone or brick. These materials allow moisture to pass through them and then this moisture evaporates either externally or internally. This keeps the building fabric dry because externally the heat from the sun and the wind will dry out the building structure, and internally the moisture will evaporate due to ventilation circulating around the building. 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. The correct thickness of insulation must also be used. It may be harmful to the building structure to over-insulate it internally. For extra reassurance, Pavatex recommends a detailed assessment of the finished construction using a very advanced dynamic moisture assessment programme called WUFI – undertaken by others.

Pavadry

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
51	12.04	110 x 58	108 x 56	42	25.40	384	T&G
71	14.45	110 x 58	108 x 56	32	19.35	353	T&G

Pavadry Reveal Board

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
19	2.95	110 x 60	110 x 60	120	79.20	327	Square Edge

Technical Details	Pavadry (Pavatherm-Combi / OSB3)
Density (kg / m³) Pavatherm-Combi / OSB3	145 / 600
Declared Thermal Conductivity λ D (W/mK)	0.041 / 0.13
Water Vapour Diffusion Resistance Coefficient μ	Pavatherm-Combi: 3 OSB3: 150 Wet Cup / 240 Dry Cup
Specific Heat Capacity - C (J/kgK)	2100 / 1700
Compressive Stress at 10% Compressive Deformation (kPa)	100 (Pavatherm-Combi)
Fire Rating (EN 13501-1)	Class E

Application

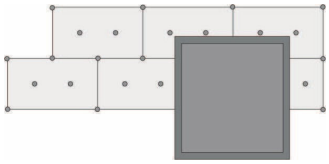
Pavadry panels must be mounted onto dry, flat, level walls. If the surface is bare or uneven, the walls must first be plastered and levelled with a breathable lime plaster, because cold air gaps between the wall and the wood fibre may cause interstitial condensation. Any cement-based plaster or oil-based paints on the walls must 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 lime-plastered wall using a lime bonding coat called Baumit RK70 and the boards should be fitted with the OSB side facing into the room. 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 and where the window and door frames meet the reveal. Begin fitting Pavadry boards in the bottom corner of the wall, with a straight edge butted tightly up to the adjacent wall. These straight edges at the perimeter of the room must be sealed to the adjacent floor and side walls with Iso Bloco expanding foam tape to prevent any thermal bypass. 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.

To avoid thermal bridging, insulate in between the floor joists next to the external walls with 50mm Pavaflex flexible insulation. Also to maintain the airtightness of the wall, either tape or plaster around the junction where the joists enter the wall.

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 2 pallets on top of each other.

Fixing into Masonry Construction

Powerline self-tapping countersunk screws are used to secure the Pavadry boards to solid masonry walls and Ejot SDF-S plus 8UB fixings with wall plugs are used on rubble masonry or cob walls. Powerline must be anchored into the masonry substrate by at least 40 mm and Ejot SDF-S plus 8UB are embedded by 80 mm min excluding the plaster layer. As a general rule, the Pavadry boards are secured with 3 fixings per board in addition to the bonding layer.



The boards should not align with the corners of the windows or doors as it will weaken the strength of the Pavadry 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 Pavadry system is installed.

Plasterboard or Fermacell Finishing Board and Fixing Objects to Wall

Plasterboard can be fitted directly to the OSB3 board surface of the Pavadry or if a services void is required, vertical battens can be secured to the Pavadry surface, and in turn plasterboard is fitted to the battens. Lighter fixtures and fittings can be fixed through the wall lining into the OSB3. Fermacell and some types of plasterboard offer additional strength to support heavier items if required. Very heavy objects should be secured back to the masonry wall, and to reduce thermal bridging, we recommend using thermally broken fixings such as Fischer Thermax.

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