

ThermaSlim Aerogel Magnesium Oxide Board

Internal Wall Insulation (IWI) Board

Installation Guidance / Suggestions Only



- Unique insulation with the lowest Thermal Conductivity of any insulation product. Differing performance criteria available dependent on the specification - (please ask).
- *Thermablok Aerogel Blanket* - 0.015 W/m²K - (C - s1,d0)
- Non Flammable Fire Classification Euro C - s1,d0 BS EN ISO 1182
- Hydrophobic, extremely vapour permeable but non hydropscopic offering no transport for liquid.
- Breathable Vapour Open and also Non Breathable Systems available dependent on the specification required.
- MgO Facia Board (Euroclass A1 rated) offers a hydropscopic buffer.
- Hostile environment to mould offering no bacterial platform.
- No resins, binders or performance enhancing gases which may be released through service.
- 100% Recyclable.
- Environmentally Friendly.
- Rodent / Vermin Resistant.
- Mechanical fix.

Installation

Step 1 - Preparation of the Area

- Before starting with the installation, establish if a breathable system or a non breathable system is required.
 - Breathable wall assembly - Breathable Board System without Vapour Control Layer
 - Non breathable wall assembly - Non Breathable Board System with Vapour Control Layer.

If the masonry onto which to be attached is vapour open / breathable - allowing vapour to pass through it and away into the atmosphere - a breathable system is safe to use.

If the masonry onto which to be attached is vapour closed / non breathable - not allowing vapour to pass through it - the vapour needs to be controlled. This achieved with a Vapour Control Layer.

The MgO Carrier Board (Euroclass A1 to EN13501-1) is hydroscopic which means it can take up internal moisture quite safely and without danger of mould and either pass as vapour, or hold in the board as moisture until the point of ventilation where it will be released.

- All areas should be free from loose particles.
- Check the entire area for any signs of mould growth.
- If mould growth is present, remove and apply the affected areas with an anti bacterial agent. It is a good practice to use the anti bacterial agent across all areas anyway.
- If appropriate and possible, remove all skirting boards, cornice and dado rails from the walls as well as any fixtures, light fittings, switches, plug sockets etc.
- A thin alkaline parge coat should be applied to the wall surface to offer a continual and even contact surface area. This will level textured or damaged walls and provide a flat and flush surface for the aerogel blanket / board to be attached as well as providing a further hostile environment to mould and bacterial growth. This will also assist with transition of vapour to liquid where a vapour permeable / breathable system is being used.
- Any dividing walls within the property which tie into external walls should be considered for an installation of insulation as well. This is commonly referred to as a Return Wall Board which is invariably the same as a Reveal Board. The distance of any such return is recognised to be approximately 400mm to 500mm to minimise thermal bridging down the wall. This is a guide only and would need to be discussed and specified by your design team / architect / professional.

Installation

Step 2 - Cutting the Thermablok ThermaSlim Aerogel IWI Boards

- When handling *Thermablok Aerogel* it is advisable to take reasonable precautions as the material can be dusty. It is therefore recommended that standard levels of PPE are observed with protective clothing, gloves, safety goggles and dust mask are worn.
- Measure the overall height of the wall to be insulated. *Note that all walls and window reveals will be plumb therefore adjustments may have to be made to the dimensions of the board to allow tolerance.
- *ThermaSlim IWI Boards* should be cut in a well ventilated area. *ThermaSlim IWI Boards* can be cut easily using circular saws with tungsten carbide tipped blades. Vacuum attachments to cutting tools are recommended.
- To achieve the best quality finish, cut *Thermablok Aerogel* with light compression. A common practice is to apply an additional waste sheet material on the blanket insulation side to sandwich and compress the blanket insulation prior to cutting.
- It is not recommended to use a handsaw as this can tear and damage the aerogel insulation however if for whatever reason this has to be done it is suggested to clamp a sheet of ply to the under side to compress the aerogel material between the rigid boards.
- Thermablok Aerogel Blanket materials should be cut accurately and cleanly with a ThermoCutter Hot Knife, a ceramic blade. Alternatively they can be cut with long nosed tin snips.
- *At the 90⁰ junctions between the external wall and the connecting internal wall and / or a window reveals for example, it is important to have the two adjoining planes of aerogel insulation connected fully to ensure there is no thermal weakness. This is achieved by rebating the depth of the aerogel insulation from the length of the adjoining board. This ensures that the insulation joint dovetails for direct insulation contact at the abutted corners with either a similar board or *Thermablok Aerogel ThermaSlim Reveal*.

Installation

Step 3 - Fixing the Thermablok ThermaSlim Aerogel IWI Boards

- Where there is a window to consider it is advised to start with the straight edge of the board lining up to the reveal.
- Where installing a window reveal, ensure the main wall insulation board is kept flush to the reveal but allow it to protrude past the reveal by the depth of the reveal insulation board. This will allow for the correct fitting and dovetailing of a reveal board later at the 90° angle.
- Ensure as tight a fit as possible to the perimeter as this will prevent a thermal weakness and a possible thermal bridge.
- Once the board is in place, apply pressure to compress the aerogel slightly. This will help to prevent snagging of the drill bit on the aerogel. Use the required sized drill bit to drill pilot holes through the board and into the wall to a depth appropriate to the length of fixing being used. Fixings are usually standard sizes - length / diameter, although can vary. Length governed by thickness of board system. Guidance suggests to allow a minimum of at least 40mm - 50mm into the existing substrate / anchor point.
- Push the stainless steel / nylon fixings into place. A minimum of at least 4 pins per m² is suggested with a mix of stainless steel and non anchor pins / mushroom plugs. Please see BBA guidance for further details.
- As additional boards are installed ensure that the aerogel insulation is abutted tight to the other to prevent thermal loops. * At point of manufacture and board layup / lamination the Aerogel Blanket is oversized to be slightly proud of the carrier board to ensure a good joint of aerogel to aerogel.
- If a Vapour Control Layer (VCL) is incorporated into the middle of the board as a non breathable system it is important that a suitable VCL Sealing Mastic is used to repair all penetrations and a small bead is used to join the VCL lines to each other at junctions.
- Items used and supplied to fix *Thermablok Aerogel Insulation* but considered outside the scope of this document include:

Vapour control membrane

Sealing / mastic compound

Stainless steel anchor pins / screws / fixings / plastic fixings

Aggregate board primers and finishes.

These products are available with the appropriate system at point of sale.

Installation

Step 4 - Finishing

- *Thermablok Aerogel ThermaSlim Magnesium Oxide Board* offers a tough impact layer and is compatible with a wide range of commonly available plasters and finishes.
- To offer as vapour open finish as possible it is recommended to apply our specially formulated priming and lime plaster system. (available separately on request).
- Treat the magnesium carrier board prior to plaster finish with the specially formulated Aggregate Primer. This will offer a key whilst maintaining vapour permeability of the board. Ensure full coverage.
- Treat joints / junctions with the jointing compound and scrim tape as well as heads of fixings before chosen finish. Varying finishes can be considered at varying depths and application methods. (surface priming may be required)
 - Lime
 - Gypsum
 - Clay
 - Sand & Cement
 - Polymer modified coating
- Allow to dry and finish as normal. If to be painted, use a breathable paint to maintain full breathability.
- The fixation of items other than lightweight objects should be according to professional advice and is not covered by this advice document.
Screw Withdrawal Strength - BSEN 321 - 560N.
- The systems, if damaged during use can be removed and replaced. It is advised to inform those responsible for the upkeep of the system how to maintain the vapour permeability of the completed solution to avoid use of unsuitable coatings and paints on the building fabric

All information, advice or other support services are based on our current knowledge and experience and are provided according to the best of our knowledge for the applications and installations as they are understood. This information does not relieve designers, installers or contractors from carrying out their own investigations, analysis and feasibility particularly with regards to the suitability of the materials and systems specified within any proposed installation.

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