

Site Works (General)

Site Safety Information

Products containing *Thermablok Aerogel* are delivered to site on pallets either in various sized rolls, strips or boards with labels identifying the product name and dimensions.

Storage & Handling

Thermablok Aerogel 10mm Insulation Blanket (Blue / Grey) weighs approximately 1.5 kg per m².

Thermablok Aerogel A2 10mm Insulation Blanket (White) weighs approximately 2.0 kg per m².

According to the final composition more than one person may be required to lift.

ThermaSlim IWI / Reveal composite boards should be stored & transported with the insulation blanket layers facing together. They should be carried vertically, with the long edge parallel to the ground to avoid damage to the assembly.

While not considered dangerous to health, dust produced during the cutting of *Thermablok Aerogel* products can irritate, therefore it is recommended appropriate PPE is observed and that a dust mask (P100/P3 filter) and eye protection is worn when cutting. Cover boards/rolls during transport through common areas of the building. Always observe local safety rules.

NB. Aerogel dust is extremely hydrophobic, use a little soap when washing to remove any dust. Work-wear can be laundered as normal.

Preparation

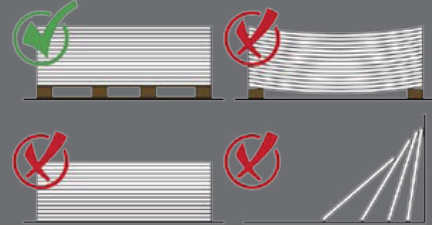
A competent building professional should be employed to install *Thermablok Aerogel*. A qualified electrician/plumber must be used to modify the position or any wiring or pipework.

The safe and appropriate ventilation of the property must not be negatively impacted by the installation of the insulation system.

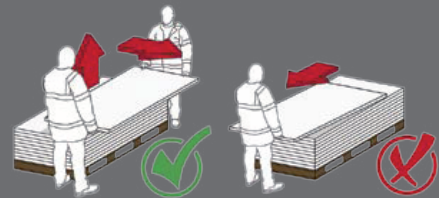
Substrates / thermal bridges should be sound, clean, dry and free from biological contamination. Any potential for air or moisture leakage should be repaired before work commences. It may also be necessary to remove old wall coatings, particularly those containing organic materials, before applying the upgrade solution.

ThermaSlim Boards will accommodate minor wall or floor surface undulations, however a stabilising parge coat layer may be required and is recommended and beneficial.

Correct protocol for carrying and storing the ThermaSlim IWI / Reveal Boards.



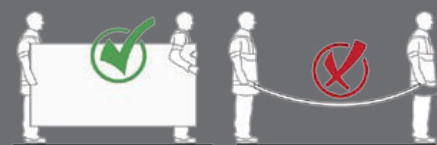
ThermaSlim Boards should be stored flat, raised from the ground on a pallet, in dry conditions indoor and under cover. Boards should not be leant upright for long periods of time.



Boards should always be lifted by 2 people and not dragged across each other to prevent unnecessary scratching or damage.



Any moisture allowed to infiltrate between the sheets will cause permanent surface staining. They should be protected from the weather and other trades on site at all times.



Boards should be carried on edge and extra precaution should be taken to protect the visible front edge and corners.

Site Works

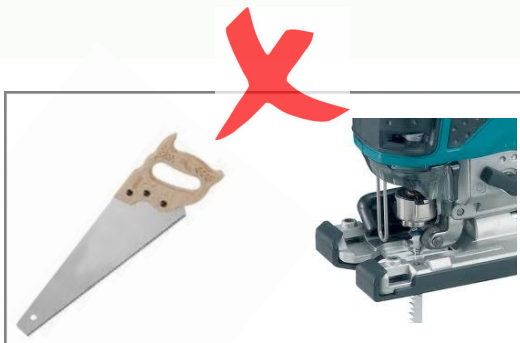
Cutting

Blanket and Strips

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.



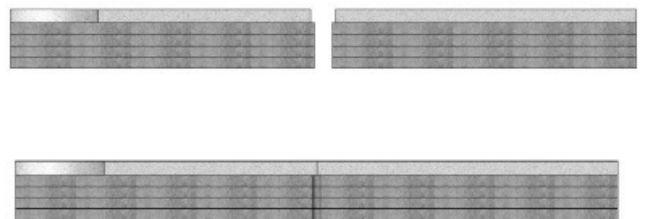
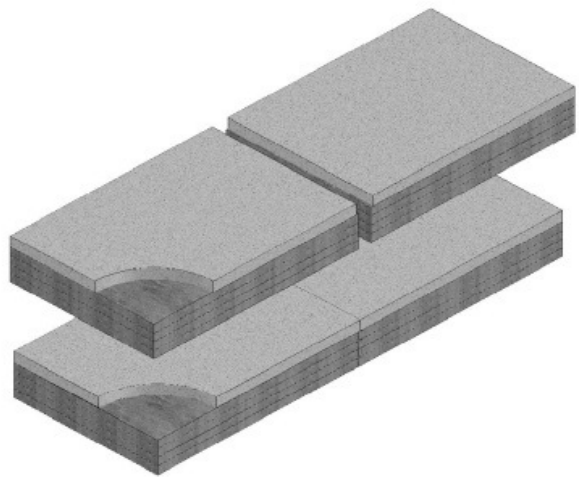
Note: Use of a jig saw or toothed hand saw is not recommended.



ThermaSlim IWI / Reveal Boards

ThermaSlim Boards should be cut in a well ventilated area.

ThermaSlim 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 with light compression.



Note: *Thermablok Aerogel Blanket* is oversized by 1-2mm (perimeter) to ensure tightly abutted and closed joints to eliminate thermal bridging.

Site Works

Fixing Instructions

Thermalok Aerogel Blanket & ThermaSlim Boards can be mechanically fixed in direct contact with the substrate, rail or frame with the appropriate fixings.

Thermablok Aerogel Blanket has excellent compressive strength and tensile strength in the X and Y axes however it is relatively weak in the Z axis and therefore should be mechanically fixed especially where perpendicular / transverse loading is expected.

Care and consideration should be taken to identify and locate all increased load bearing requirements for kitchen units, shelves or televisions before applying the insulation solution.

Internal Wall

Solid Wall (IWI) - Wet System

Thermablok Aerogel Blanket should be secured to and in direct contact with the substrate using appropriate and sufficient mechanical fixings - anchor pins.

ThermaSlim Boards should be secured tightly to the substrate using appropriate mechanical fixings - anchor pins. The boards should be butted tightly to ensure continuity of thermal performance and avoid thermal looping.

Solid Wall (IWI) - Dry System

ThermaSlim Rail Systems utilise an insulated rail to offer a flat anchor point used in conjunction with waterproof membrane systems where multiple mechanical fixings are not possible and as an alternative to the other *ThermaSlim Systems*.

Timber Frame (IWI)

Thermablok Aerogel Blanket should be stapled to wooden substrates such as studs and rafters (stainless steel staples preferable). If screwing or pinning use a large diameter washer (20mm - 30mm) to avoid pull through.



ThermaSlim Boards should be secured tightly to the substrate using appropriate and sufficient mechanical fixings.

The boards should be butted tightly to ensure continuity of thermal performance and avoid thermal looping.

Fixing Methods / Types

The type and length of mechanical fixings should be selected according to local fire standards and should combine both stainless steel and nylon fixing construction to minimise point of thermal bridging.

A minimum of 9 fixings per 1.44m² panel should be used for solid wall and for varying stud / rail systems.



Note: If the system is to be installed with a vapour control layer (VCL) any penetration should be repaired using a suitable VCL mastic / sealant. Items used 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
- Fixing rails

Products are available with the appropriate system at point of sale.

Site Works

Floor Insulation

Wet Screeds - Thermablok Aerogel Blanket

Ensure floor slab is level and free from dust & debris.

A damp proof membrane (DPM) should be placed on the existing slab as necessary.

Install *Thermablok Aerogel Blanket* layer to the necessary thickness directly onto slab / DPM and ensure parallel joints are butted tightly. Use a ceramic or heated blade to cut *Thermablok Aerogel Blanket* to fit.

Use *Thermablok Aerogel Blanket* as an effective perimeter edge insulation to ensure continuity of the floor to wall insulation.

Avoid damage to *Thermablok Aerogel Blanket* layer during installation, use of a temporary protective layer is recommended.

Cross Lap alternate layers of *Thermablok Aerogel Blanket*.

Cover *Thermablok Aerogel Blanket* layer with a separating layer / membrane to prevent screed contact and runoff.

The separating layer / membrane should cover 100% of the *Thermablok Aerogel Blanket*, overlap joints by min. 150mm and secure with an appropriate membrane jointing tape.

Bring membrane up walls – min 50mm, secure membrane to walls with appropriate sealing tape.

Concrete or anhydrite screed can be applied as normal.

The use of this system would also apply when incorporating both wet and dry UF Heating Systems.

Engineered floor tile systems can be placed directly onto the rigid sub floor, consult manufacturers' guidelines for more information.

Floating Floors

The installation follows that of a wet screed however a sealed air tight membrane should be used instead of a separating layer to prevent dust generated during installation from migrating into the floor covering. This membrane should be brought up the wall to tie into the vertical insulation line if appropriate and sealed using an appropriate tape / sealant.

Hard Floor / Carpeted Floors

ThermaSlim Aerogel Flooring System is designed to lock together to create a solid finish onto which a hardwood, ceramics tile or underlay / carpet can be incorporated.

Thermablok Impact Panel System incorporates a 3mm / 4mm high impact board encapsulated in a highly durable, robust vapour control membrane onto which a hardwood, ceramic tile or underlay / carpet can be incorporated.

The laminated boards have the *Thermablok Aerogel Blanket* slightly proud at the perimeter to guarantee connection of the insulation layer. The flooring system comes as standard with a membrane vapour control layer wrapping each board. Each joint should be sealed and mechanically fixed.

Thermablok Aerogel Strips should be brought up the wall to tie into the vertical insulation line if appropriate and sealed using an appropriate tape / sealant.

Flat Roof & Terrace Systems

Thermablok Aerogel Blanket can be used as the primary, composite or secondary insulation in flat roof, balcony and terrace upgrades. As these applications are site specific, guidance should be sought from your local *Thermablok Aerogel Blanket* partner in advance.

Site Works

Fire Behaviour

When correctly installed the *Thermablok Aerogel Blanket* component will be situated between the substrate and the MgO facing construction panel. *Thermablok Aerogel* will not contribute to the development of a fire or present a smoke or toxic smoke hazard as fire develops.

***Thermablok Aerogel Insulation Blanket* rated Euroclass C, s1,d0**

***ThermaSlim IWI MgO Facing Board* rated A1**

***Thermablok Aerogel A2 Insulation Blanket* rated A2 - s1,d0**

Proximity of Flues and Appliances

Where the *Thermablok Aerogel* assembly is installed in close proximity to flue pipes or heat producing appliances, the relevant provisions of the National Building Regulations should be met.

Thermablok Aerogel Insulation Blanket maximum operating temperature is 200°C however expert guidance should be sought from your local *Thermablok Aerogel* partner if detailing for use above normal construction temperatures. Alternative *Thermablok Aerogel* materials -A2 - s1,d0 rated and / or high temperature rated are available where needed.

Electrical Wiring

As with other and all forms of insulation, de-rating of electrical cables should be considered where *Thermablok Aerogel* restricts the air cooling of electrical cables. Contact with *Thermablok Aerogel* does not negatively affect PVC coated cables.

Infestations

Use of *Thermablok Aerogel Insulation Blanket* does not promote infestation; care should be taken to seal all cavities to prevent habitation of vermin or insects.

Thermablok Aerogel is extremely hydrophobic and does not provide a source of nutrition for mould.

Decoration and Finishing

ThermaSlim IWI / Reveal Board Systems offer a tough impact layer and is compatible with a wide range of commonly available primers, plasters and finishes. To offer a vapour open finish as possible it

is recommended to apply our specially formulated aggregate board primer in conjunction with a lime plaster system. (available separately on request).

The following finishes can also be considered. (surface priming may be required)

- Lime
- Gypsum
- Clay
- Sand & Cement
- Polymer modified coating

Plaster and render systems can also be applied directly to the *Thermablok Aerogel Blanket*. (Note: This finish will require a mechanically fixed reinforced mesh to support the weight of the chosen base coat and finishing system. It is recommended to prepare a test area in advance and consult with the system designer.)

The thickness of the primer / finishing coat should follow manufacturers recommendations and will invariably incorporate a proprietary mesh in-between base and finish coats. It is strongly advisable that the installer test an area of *Thermablok Aerogel Blanket* for adhesion / drying time before addressing the main work area.

Wall Mounting

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

Maintenance

The aerogel systems, if damaged during use can be removed and replaced.

It is advised to inform those responsible for the upkeep of the installed systems how to maintain and correctly care for the materials to avoid damage and also manage the vapour permeability (where appropriate) of the completed solution, to avoid use of unsuitable coatings and paints on the building fabric.

Site Works

Durability

Under normal conditions, the board systems are dimensionally stable, durable and will have a service life equal to the building in which they are installed. The *Thermablok Aerogel* component is expected to perform for a minimum of 60 years.

Emissions

Thermablok Aerogel meets the highest requirements of the interior emissions M1 test (Finland)

Thermablok Aerogel does not contain any resins, binders or performance enhancing gasses which may be released during service.

Environmental

An Environmental Product Declaration for *Thermablok Aerogel* (EPD) is available on request. *Thermablok Aerogels* and *Aspen Aerogels* operates a sustainable supply chain management and responsible sourcing system.

Additional Information

Additional information such as WUFI assessment data, case studies, details and technical information not contained in this document may be obtained from *Thermablok Aerogels*.

Contact Details

Thermablok Aerogels Ltd

The Oasts
Church Farm Estate
Ulcombe Hill
Ulcombe
Kent
ME17 1DN
Tel: +44 1622 840289
Email: info@thermablok.co.uk
Web: www.thermablok.co.uk



Thermal Insulation Properties

Provides a high level of resistance to thermal movements during hot and cold cycles (Thermal Shock)



Impact Resistant

An ability to withstand abuse, including surface impact - 34 N/mm²



Low Carbon Manufacturing Process

A natural cured process with a chemical reaction using low levels of heat and a lengthy drying out stage



Moisture & Water Resistant

RESISTANT boards will not physically deteriorate when subjected to water or moisture. Provides a strong moisture barrier



Sound Insulation

Provides excellent sound insulation for walls, floors and ceilings



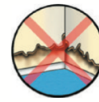
Rodent Resistant

Resistant to rodent infestation like mice, rats and insects



Easy and Fast to work

Easy and simple to prepare and attach. Rough surface allows application of textured, cementitious renders or direct paint / wallpaper



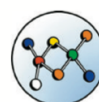
Mould Resistant

Unlike paper faced/wood based products, RESISTANT does not contain cellulose, limiting mould growth



Breathability

Ensures a healthy, durable working building with a natural ability to absorb and release moisture



Chemically Stable

Produced from natural inorganic raw materials, resulting in a strong, durable chemically stable board



Non-Hazardous to health

Will not cause harm to persons and/or the environment. Produced without asbestos or other inorganic fibres



The data contained in this document as well as advice or other support services are based on our current knowledge and experience and are provided according to our best knowledge. In view of many factors that may affect processing and application of our products, this data does not relieve designers, installers or processors from carrying out their own investigations and tests, particularly with regards to the suitability of the goods supplied for the processes and purposes they intend to use them for; neither does this data imply any guarantee of certain properties, or the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights, measured values etc. given herein may change without prior notice and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.