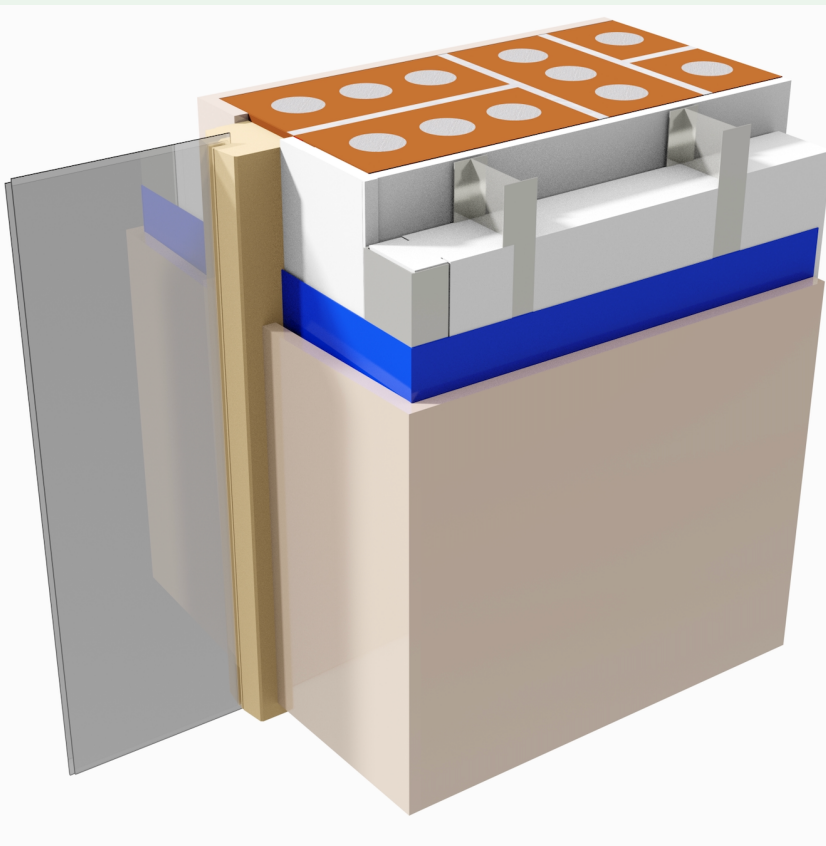


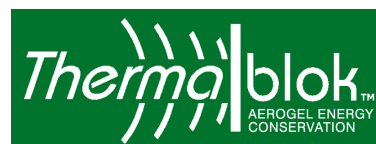
Thermablok Aerogel Insulation Slab and Frame

Internal Wall Insulation System (IWI)

High Performance Internal Wall Insulation System



- Unique insulation with the lowest Thermal Conductivity properties - 0.016W/mK - (A2 - s1,d0 rated material)
- Hydrophobic, extremely vapour permeable but non hygroscopic offering no transport for liquid.
- Breathable Materials (Vapour Open).
- Vapour Closed option with VCL.
- Hydroscopic Buffer Facia.
- Hostile environment to mould offering no bacterial platform.
- Fire Performance options - A2 -s1, d0 (White)
- No resins, binders or performance enhancing gases which may be released through service.
- 100% Recyclable.
- Environmentally Friendly.
- Rodent / Vermin Resistant.



Introduction

Thermablok Aerogel Advanced Insulation an Environmentally Friendly Solution to Thermal Bridging

Thermablok Aerogel Insulation is an advanced, ultra high performance fibre reinforced silica aerogel blanket insulation suitable for thermal upgrades of solid walls, floors and roofs and associated thermal bridges in new, modern and historic buildings.

The material uses the insulating power of trapped air in a nano-porous silica matrix to achieve its excellent thermal performance and represents the most thermally efficient bridging treatment available today.

Unlike competing solutions, *Thermablok Aerogel* can be mechanically fixed to substrates such as concrete, brick, wood and metal and is ideal for use in building construction and energy efficiency retrofits.

Most heat transmission through walls is passed directly through the building envelope, be it masonry, block or stud frame to the internal facia in a process known as *Thermal Bridging*.

Thermablok Aerogel, which has the highest insulation value of any known material with the lowest thermal conductivity value of any solid (0.015W/mK to 0.016W/mK), works by breaking this thermal bridging link.

Products

- *Thermablok Aerogel Insulation Blanket*
- *Thermablok Aerogel A2 Insulation Blanket*
- *Thermablok Aerogel ThermaSlim Internal Wall / Reveal / Return Insulation Board Systems (IWI)*
- *Thermablok Aerogel ThermaSlim Reveal / Return Insulation Board System*
- *Thermablok Aerogel ThermaSlim Impact Panel Internal Floor Insulation (IFI)*
- *Thermablok Aerogel ThermaSlim External Insulation Finishing System (EIFS)*
- *Thermablok Aerogel Strips (Standard & Custom)*

The material is totally breathable, ensuring a healthy, durable working building with a natural ability to repel liquid whilst allowing the passage and release of moisture vapour - a major factor in historical build.

Thermablok Aerogel does **not** rely on a vacuum or heavy molecular gases to insulate. It is hydrophobic and is therefore not affected by moisture or age and is a hostile environment, offering no bacterial platform, for mould growth. It also provides major energy savings for the life of the building.

A single 10mm thickness of *Thermablok Aerogel Insulation Blanket* increases the insulation factor by up to 67% whilst maximising Gross Internal Area (GIA) -(nb. guidance only / dependant on substrate).

It is 100% recyclable.

Thermablok Aerogel material carries a European Technical Approval (ETA) governing its use as a thermal insulation in various Building & Construction applications - ETA11_0471, an Environmental Product Directive (EPD) and until mid 2022 held a British Board of Agreement (BBA) approval for the composite board systems of *Thermablok Aerogel ThermaSlim Board System* and installation as instructed.

Applications

- *Solid Wall (IWI)*
- *Partition Wall Returns*
- *Window & Door Reveals / Headers*
- *Floors*
- *Ceilings / Roofs*
- *Timber Frame, Steels, I Beams, Columns*
- *Soffits*
- *Balconies*
- *Joist Ends*
- *Pipe Lagging*

Design Considerations

Heritage Solutions

Where a breathable upgrade is required, for example in historic or heritage projects, a hydroscopic, vapour open variant - *Thermablok Aerogel* / *ThermaSlim Aerogel Board* should be selected.

ThermaSlim Aerogel Board can be part of a complete natural lime based wall insulation upgrade designed to offer a heritage finish in an easy to install and finish system.

WUFI Consultancy

Hygrothermal simulation software / data package available where required.

Breathability / Vapour Control

Thermablok Aerogel is available in breathable and non breathable forms. Product variants should be selected based on an appropriate condensation risk assessment.

Interstitial Condensation / Moisture

It may be assumed that any permeable structure with warm humid air on one side and cold air on the other will be subject to interstitial condensation and precautions need to be taken.

Thermablok Aerogel ThermaSlim Board offers a hydroscopic buffer.

Thermal Bridging / Thermal Creep

Thermablok Aerogel can be used to reduce surface condensation at window and door openings where conventional insulations would obscure the window frame or provide insufficient thermal resistance.

Window & Door Reveals

A 10mm thickness of *Thermablok Aerogel Blanket* is typically sufficient to increase the surface temperature factor F_{rsi} above the critical limit (0.75) necessary to avoid surface condensation.

Joist Ends

Thermablok Aerogel JoistTherm offers heat loss and vapour control in this critical location, not addressed with conventional insulation methods.

Partition Walls

Thermablok Aerogel ThermaSlim IWI Board's ultra slim form represents an excellent treatment for the classic thermal bridge or partition walls to external solid wall junction.

Fire Classification

Thermablok Aerogel Blanket : C - s1,d0

Thermablok Aerogel A2 Blanket : A2 - s1,d0 in accordance with DIN EN 13501-1

The specific fire performance criteria required for each element of design within any given project should be firmly established by specifiers.

NBS Specification

H11, H20, K10, K11 K40, K45,
M40, M21, P10

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 gases which may be released during service.

Environmental Impact, Sustainability and Responsibility

Thermablok Aerogels and *Aspen Aerogels* operate a sustainable supply chain management and responsible sourcing system. With a long term commitment to sustainability and responsibility: as a manufacturer and supplier of insulation products; as an employer and as a member of its neighbouring communities.

An Environmental Product Declaration (EPD) is available on request.

Specification Terms

The specific insulation will be:

Thermablok Aerogel Insulation Blanket

Thermablok Aerogel A2 Insulation Blanket

Thermablok Aerogel Isolation Strips (Blanket)

Thermablok Aerogel ThermaSlim Wall (IWI),

Thermablok Aerogel ThermaSlim Reveal / Return,

Thermablok Aerogel ThermaSlim Impact Floor (IFI)

Thermablok Aerogel ThermaSlim Basement Rail

Thermablok Aerogel Insulation Slab and Frame

Ozone Depletion Potential (ODP) - 0

Global Warming Potential (GWP) less than 5

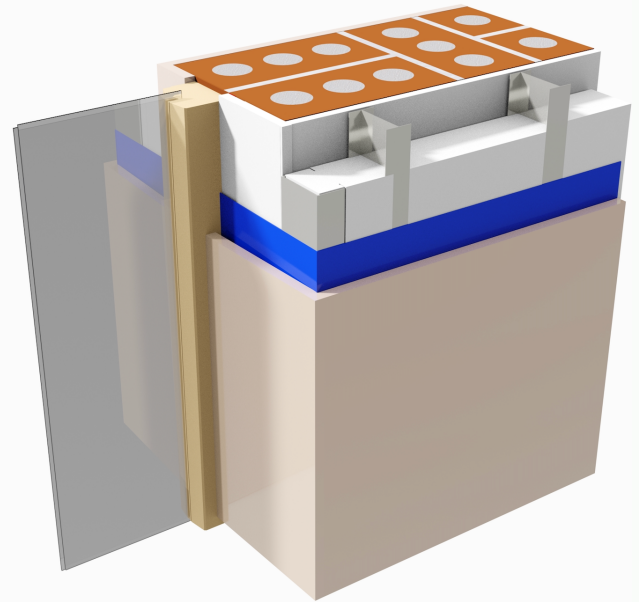
Product Description

Thermablok Aerogel Insulation Slab and Frame System

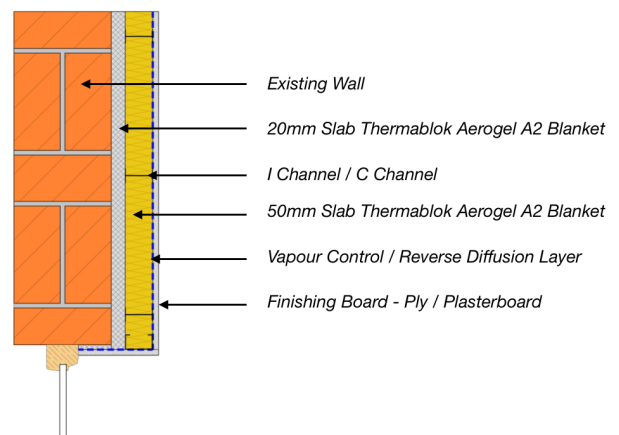
Thermablok Aerogel Insulation Slab and Frame System provides a method of installing multiple layers of Thermablok Aerogel Blanket Insulation behind and within an independent framing system. Supplied in varying depths of slab / panels it delivers outstanding thermal insulation upgrades while maximising gross internal area (GIA) for home owners, occupants, developers and investors.

Thermablok Aerogel Insulation Slab and Frame System combines pre manufactured insulation slabs that are installed flush and onto the wall. An independent frame secured from ceiling / floor provides structural stability and cavity into which further insulation slabs of the required depth and thermal performance can be easily installed. Dense finishing board of choice can be secured directly to the framing system. A secondary frame / cross member can be introduced to create a service void and integral platform to attach the chosen finishing board.

Thermablok Aerogel Insulation Blanket, a thin super insulation material which is four times more efficient at limiting heat loss than conventional insulations, enables designers to maximise thermal standards whilst maintaining optimum internal dimensions/increased Gross Internal Area (GIA).



Thermablok Aerogel Insulation Slab / Channel System



NB - Thermablok Aerogel Blanket Slab and Frame System is Vapour Closed (Non Breathable), utilising an integral vapour control layer.

NB - Thermablok Aerogel Blanket Slab and Frame System is a perfect solution to be attached onto all wall types including tanked wall assemblies with proprietary water proofing membrane systems. Also offering a direct fix option to substrate with insulated stud and a secondary framing batten to create an internal service cavity where required.

NB - The figures quoted are for guidance only. A detailed U-value calculation and a condensation risk analysis should be completed for each project.

NB - It is assumed that a good level of workmanship has been attained in all installations and thus eliminating repeat bridges and thermal loops.

Product Details

Thermablok Aerogel Insulation Slab and Frame System

Thermablok Aerogel Insulation Slab and Frame System is an advanced insulated framing system incorporating slabs / panels of differing thicknesses of Thermablok Aerogel Blanket behind the frame and in-between the frame. Product variants should be selected based on an appropriate thermal resistance performance values, fire performance criteria and tolerances available.

Individual Technical Data Sheets and Material Safety Data Sheets, Article of Information and Declaration of Performance for differing Thermablok Aerogel Blanket options available.

Critical Essential Characteristics listed below.

Thermal Conductivity

- Thermablok Aerogel A2: 0.016W/mK (White)

Reaction to Fire

- Thermablok Aerogel A2 (White):
Non Combustible - A2-s1, d0
Fire rated to BS EN 13501-1:2007

Thickness

- Thermablok Aerogel A2: 10mm & 6mm

Density (Dry) (ex works)

- Thermablok Aerogel A2: 190 - 200kg/m³

Vapour Permeability

- Thermablok Aerogel A2: EN 12086: 5mu

Mould / Bacteria

- NIL / Hostile Platform

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.

Product Details

Thermablok Aerogel A2 Insulation Blanket (A2-s1,d0)

Characteristics / Test Method / Value, Note

Characteristic	Test Method	Value
Colour		White
Thermal Conductivity (λ_D)	UNI-EN 13162:2015	0,016 W/(m×K)
Nominal Density	DIN EN 1602	200 ($\pm$ 30)kg/m ³
Material Thickness		10 mm
Panel Thickness		10/20/30/40/50 mm
Water Vapour Permeability, μ -Value	UNI EN 12086: 1999	$\mu=7$ / Sd (m) = 0,07
Dimensional Stability at def. Temperature (70°C, 48h)	EN 1604	< 1%
Commitment Limit Temperatures		-50°C to +450°C
Compressive Strength at 10% Compression -(10mm)	EN 826	30kPa
Compressive Strength at 10% Compression -(20mm - 50mm)	EN 826	48kPa
Tensile Strength Perpendicular to Faces	EN 1607	σ (MPa) $\geq$ 15.32
Behaviour Under Point Load	EN 12430	F _p > 2482 kN
Long Term Water Absorption by Immersion (48)	DIN EN 1609	W _p < 0,01 kg/m ²
Specific Heat	ASTM E 826	1.000 J/kgK
Values given for characteristics are average values.		
Reaction to Fire Classification	EN 13501-1:2019	A2-s1, d0

The classification applies to the following end-use conditions:

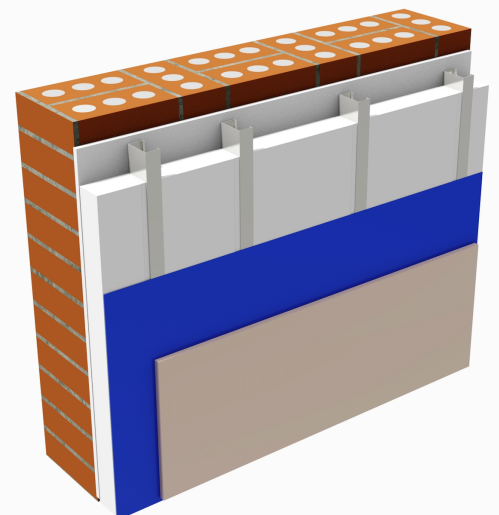
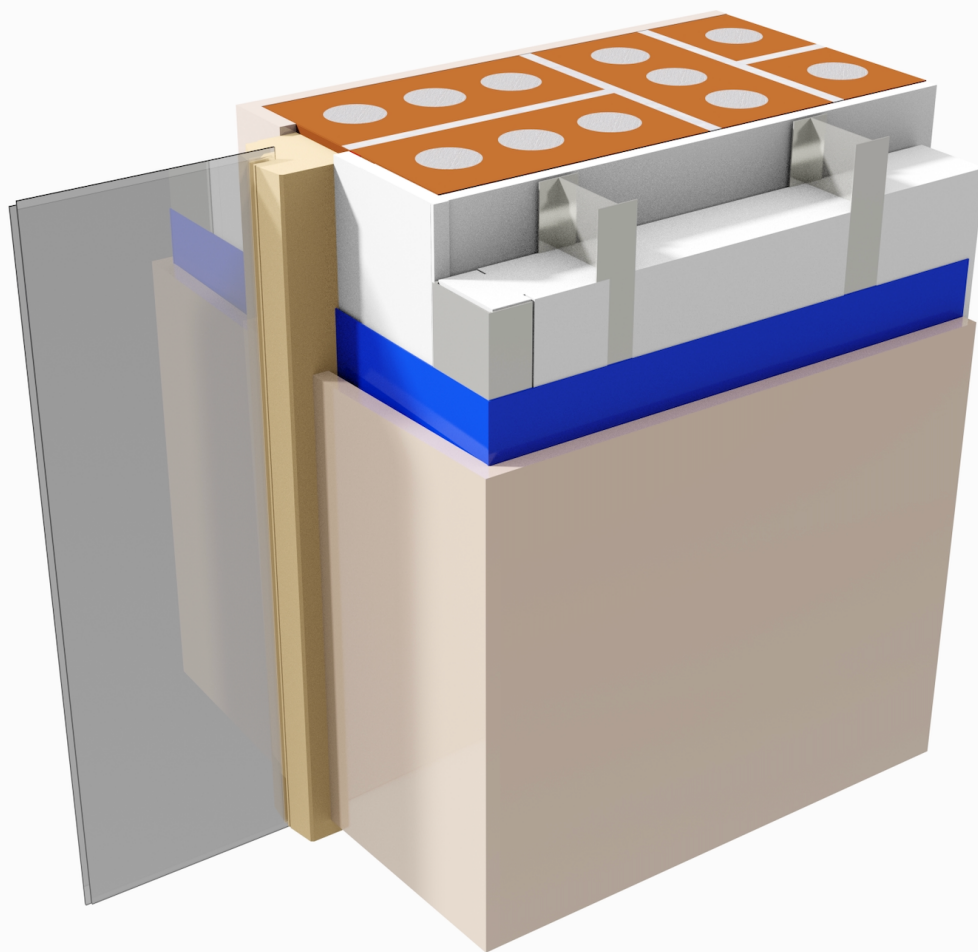
- The building product may be used on all wooden substrates of Euroclass D-s2, d0 and all substrates of Euroclass A1 and A2-s1, d0 with a minimum thickness of 10 mm and a minimum density of 510 kg/m³.
- The building product may be used on metal substrates with a minimum thickness of 0,6 mm, a minimum density of 5887,5 kg/m³ and a minimum melting point of 1000 °C.
- The building product must be fixed mechanically to the substrate.
- The building product may be used with vertical and horizontal joints.
- The building product must be protected from soaking and weathering influences.
- Certificates / Reports: Available on request.
- CE Declaration of Conformity.

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Product Details

Thermablok Aerogel Insulation Slab and Frame System

System Without Service Void



Product Details

Thermablok Aerogel Insulation Slab and Frame System

System With Service Void

