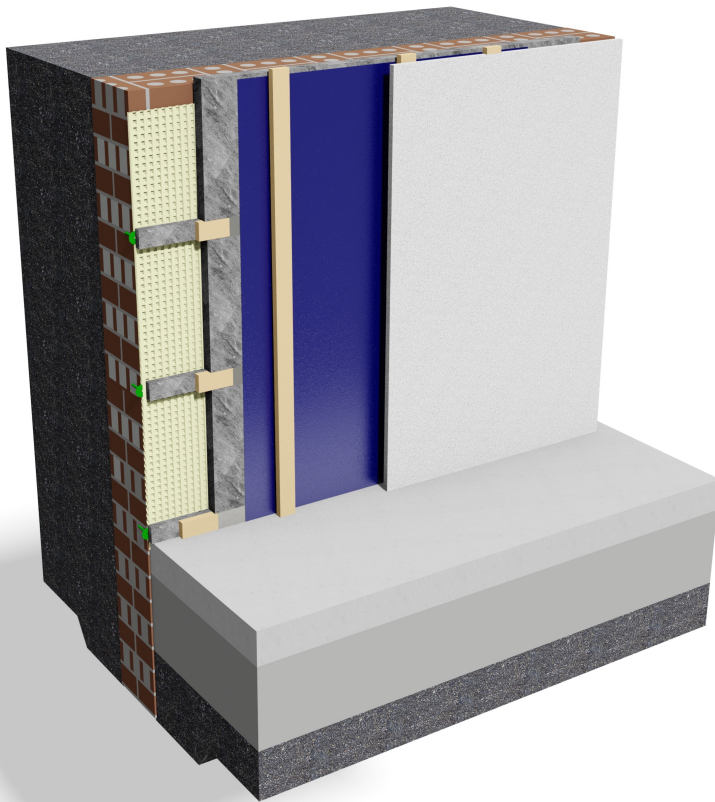


Thermablok Aerogel ThermaSlim Basement Rail

Internal Wall Insulation (IWI) Stud/Rail Basement System

Ultra Thin Internal Wall Insulation System ideal for Basement Refurbishment, including tanked walls.



- Unique insulation with the lowest Thermal Conductivity of any insulation product - differing variations are available -
- 0.015W/mK
Non Flammable Fire Classification
C - s1,d0 BS EN ISO 1182
- Hydrophobic, extremely vapour permeable but non hygroscopic offering no transport for liquid.
- Non-Breathable (Vapour Closed).
- Hydroscopic Buffer Facia.
- 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.



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 for *Thermablok Aerogel* (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

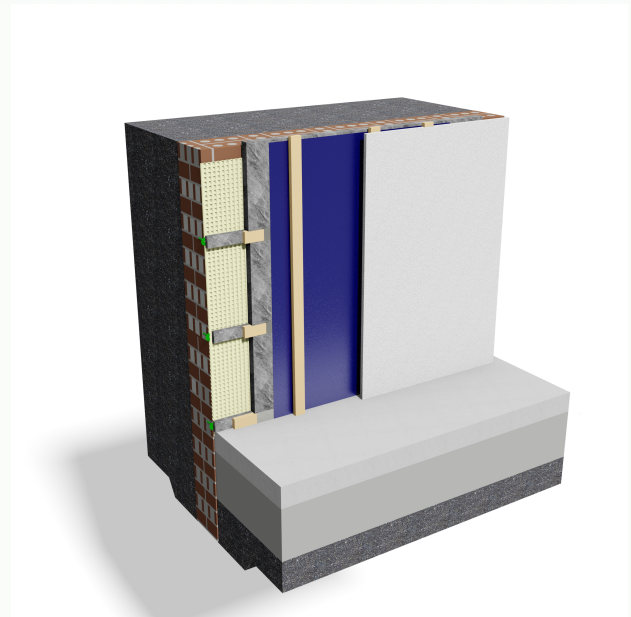
Thermablok Aerogel ThermaSlim Stud/Rail IWI Basement System

Thermablok Aerogel ThermaSlim Stud/Rail IWI Basement System provides a method of installing multiple layers of Thermablok Aerogel Blanket within a rigid framing system onto basement walls without compromising tanking systems. Supplied in individual components it delivers outstanding thermal insulation upgrades while maximising gross internal area (GIA) for home owners, occupants, developers and investors.

Thermablok Aerogel ThermaSlim Stud/Rail IWI Basement System combines a pre insulated 'AerogelStud' framing system that can be installed flush and onto the wall or proprietary tanking membrane. A secondary vertical batten provides a service cavity and an integral platform to attach the chosen finishing board.

Thermablok Aerogel 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).

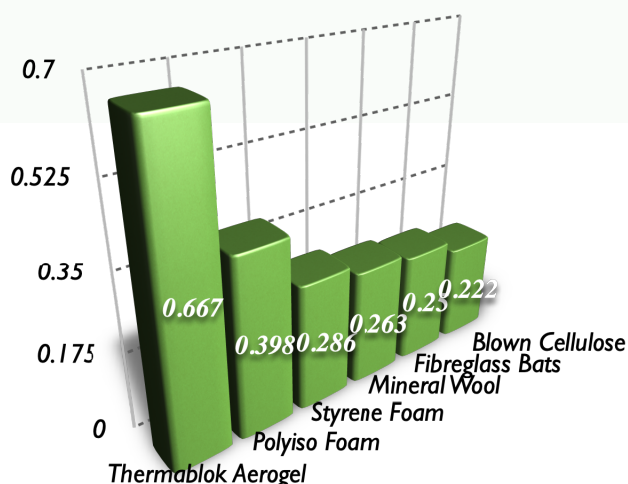
Thermablok Aerogel ThermaSlim Systems offer the thinnest robust internal wall and floor insulation available and is also manufactured in window and door reveal systems where space saving is crucial, making it an ideal solution for both new build and refurbishment projects.



<i>ThermaBlok Aerogel / Timber Batten</i>	<i>Overall Thickness of System</i>	<i>R value of laminate (m²K/W)</i>	<i>Installed U value* (W/m²K)</i>
10mm / 20mm	30mm	1.528	0.48
10mm / 30mm	40mm	1.016	0.38
20mm / 20mm	40mm	1.770	0.30
20mm / 30mm	50mm	1.885	0.24

**Calculations based on standard 225mm BRE U 2.15 rated wall assembly.*

R Value Comparisons of 10mm Thickness (guide only)



NB - Thermablok Aerogel ThermaSlim Stud/Rail IWI Basement System is Vapour Closed (Non Breathable).

NB - Thermablok Aerogel ThermaSlim Stud/Rail IWI Basement System is a perfect solution to be attached onto tanked wall assemblies with proprietary water proofing membrane systems and also offering a direct fix 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 ThermaSlim Stud/Rail IWI Basement System

Thermablok Aerogel ThermaSlim Stud/Rail IWI Basement System is an advanced insulated framing system incorporating slabs / panels of differing thicknesses of Thermablok Aerogel Blanket in-between the frame. Product variants should be selected based on an appropriate thermal resistance values and condensation risk assessment.

A comprehensive characterisation file for *Thermablok Aerogel ThermaSlim IWI Board* system is available on request for commonly used hygro-thermal simulation software programmes such as WUFI.

Standards & Approvals

ETA - European Technical Approval
EPD - Environmental Product Directive

Green Deal Certified
ECO Registered
Certificated Silver C2C
RoHS (Restriction of Hazardous Substances) - Compliant
REACH - Compliant

Ozone Depletion Potential - Zero
Global Warming Potential - Less than 5

Thermal Conductivity

- Thermablok Aerogel: 0.015W/mK
- Thermablok Aerogel A2: 0.016W/mK

Fire

- Thermablok Aerogel: Fire rated to Euroclass C, S1,D0 with operating temperatures: -200°C to +200°C

Impact Strength (Brinell)

- Thermablok Aerogel: 80kPa / 80 kN/m² at 10%

Density (Dry) (ex works)

- Thermablok Aerogel: 150kg/m³

Vapour Permeability

- Thermablok Aerogel: ISO 12572: 5 to 5.5mu

Mould / Bacteria

- Thermablok Aerogel: NIL / Hostile Platform

Specific Heat

- Thermablok Aerogel: 1000 J/kg/K

Embodied Energy (10mm)

- Thermablok Aerogel: 5.4kgs / CO₂ per m²

Batten Depth Aerogel / Timber Batten	Aerogel Thickness	Thermablok Aerogel Weight per m ²
10mm / 20mm (30mm)	30mm	4.5kg/m ²
10mm / 30mm (40mm)	40mm	6.0kg/m ²
20mm / 20mm (40mm)	40mm	6.0kg/m ²
20mm / 30mm (50mm)	50mm	7.5kg/m ²

Product Details

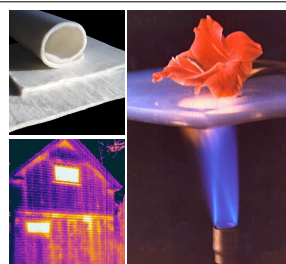
Thermablok Aerogel Insulation Blanket

Thermablok Aerogel Blanket Insulation is a flexible material available in differing thicknesses. Typically our 5mm system is used within industry, and our 10mm system more widely used in building and construction.

Product variants should be selected based on an appropriate condensation risk assessment.

<i>Essential Characteristic</i>	<i>Value</i>	<i>Test Standard</i>
Colour	Blue / Grey	
Thickness	5mm / 10 mm	DIN EN 823
Thermal Conductivity (λ_D)	$\lambda_{D(23,50)} = 0.015 \text{ W/m.K}$ $u_{23/50} = 0.003, u_{23,80} = 0.006$ $F_{m1} = 1.005, F_{m2} = 1.059$ $R_{D(23/50)} = 0.60 \text{ m}^2\text{K/W}$	EN 12667
Water Vapour Permeability, μ -Value	$\mu \leq 5.0$	EN 12086
Short Term Water Absorption by Partial Immersion	$W_p \leq 1 \text{ kg/m}^3$	EN 1609 (A)
Apparent Density	$150 \text{ kg/m}^3 \pm 20\%$	EN 1602
Dimensional Stability	Length $ \Delta \epsilon_l \leq 1\%$, Width $ \Delta \epsilon_b \leq 1\%$, Thickness $ \Delta \epsilon_d \leq 1\%$	EN 1604
Geometry	Length -300mm / + no limit Width $\pm 25\text{mm}$ Thickness $\pm 1\text{mm}$	EN 822, EN 823
Reaction to Fire Classification	C,s1,d0	DIN EN 13501-1
<i>Values given for characteristics are average values.</i>		

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 (± 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	$\mu=7 / S_d (m) = 0,07$
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) ≥ 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

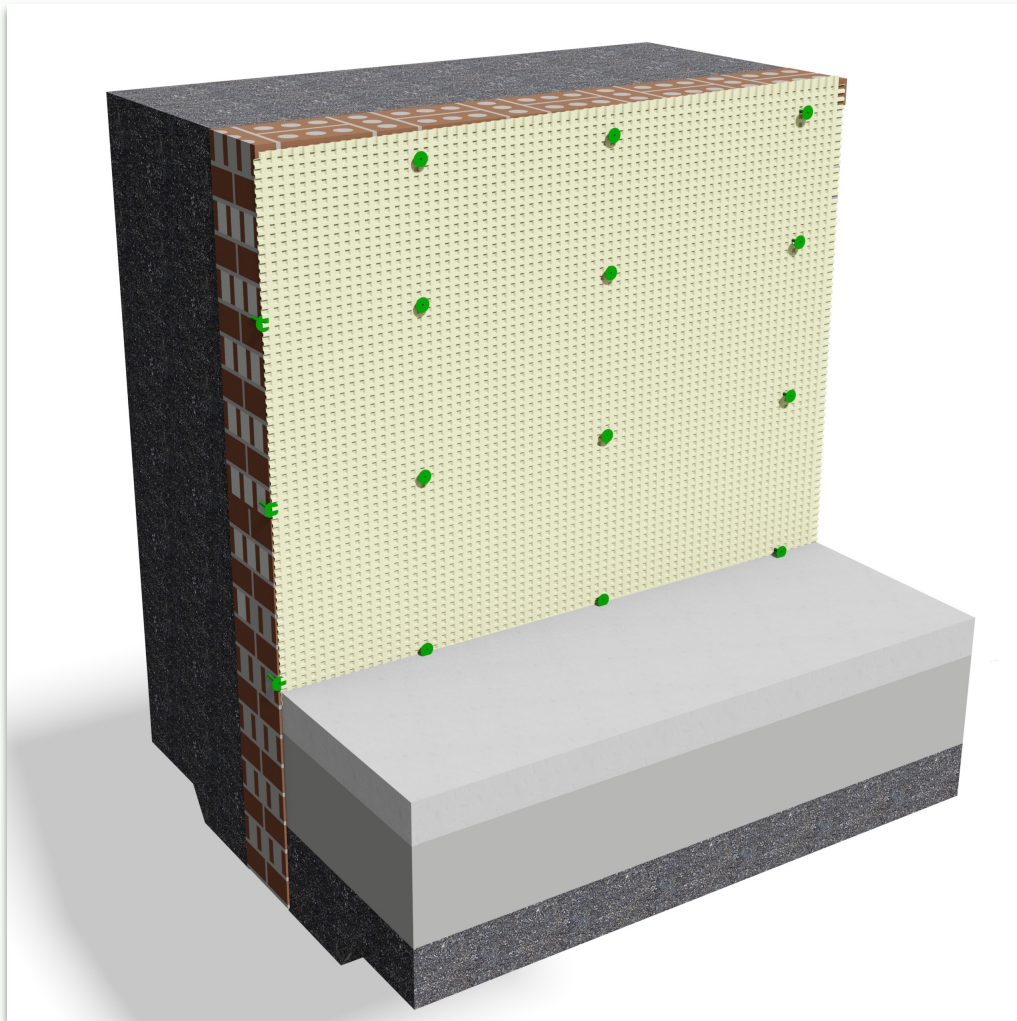
The classification applies to the following end-use conditions:

- 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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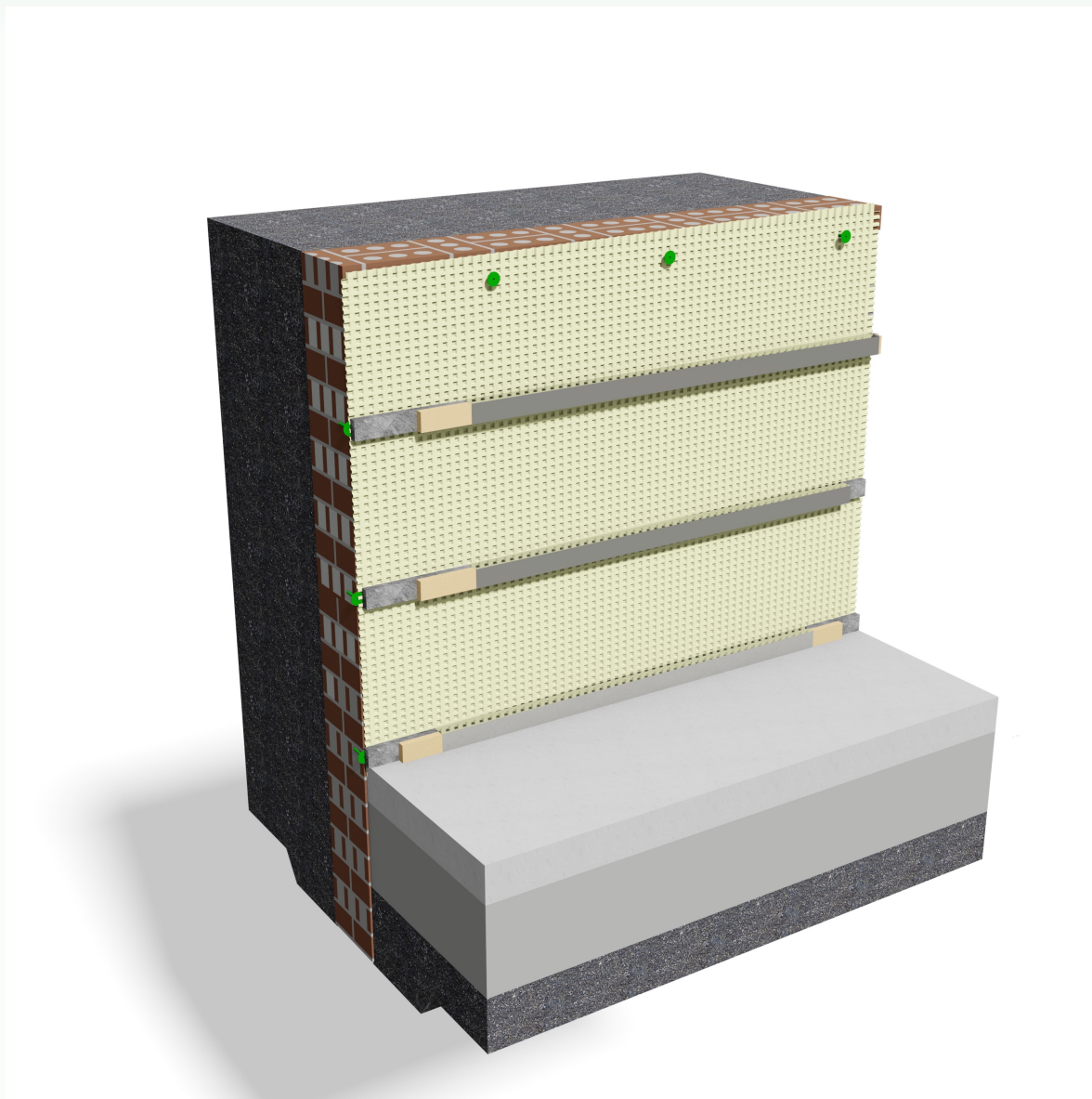
Product Details

Thermablok Aerogel ThermaSlim Stud/Rail IWI Basement System

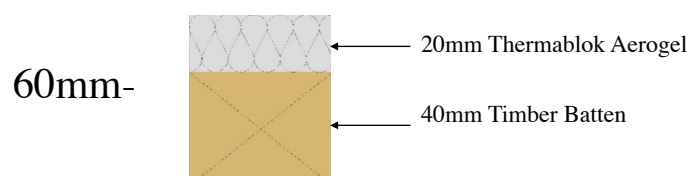
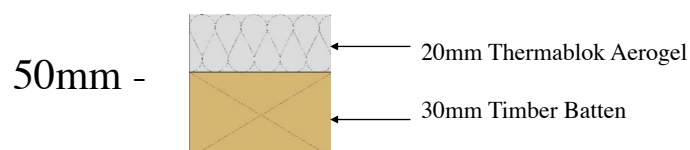
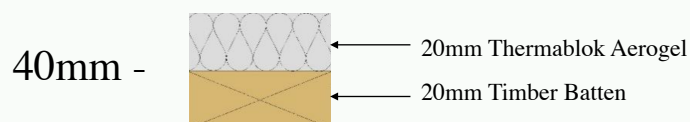


Product Details

Thermablok Aerogel ThermaSlim Stud/Rail IWI Basement System

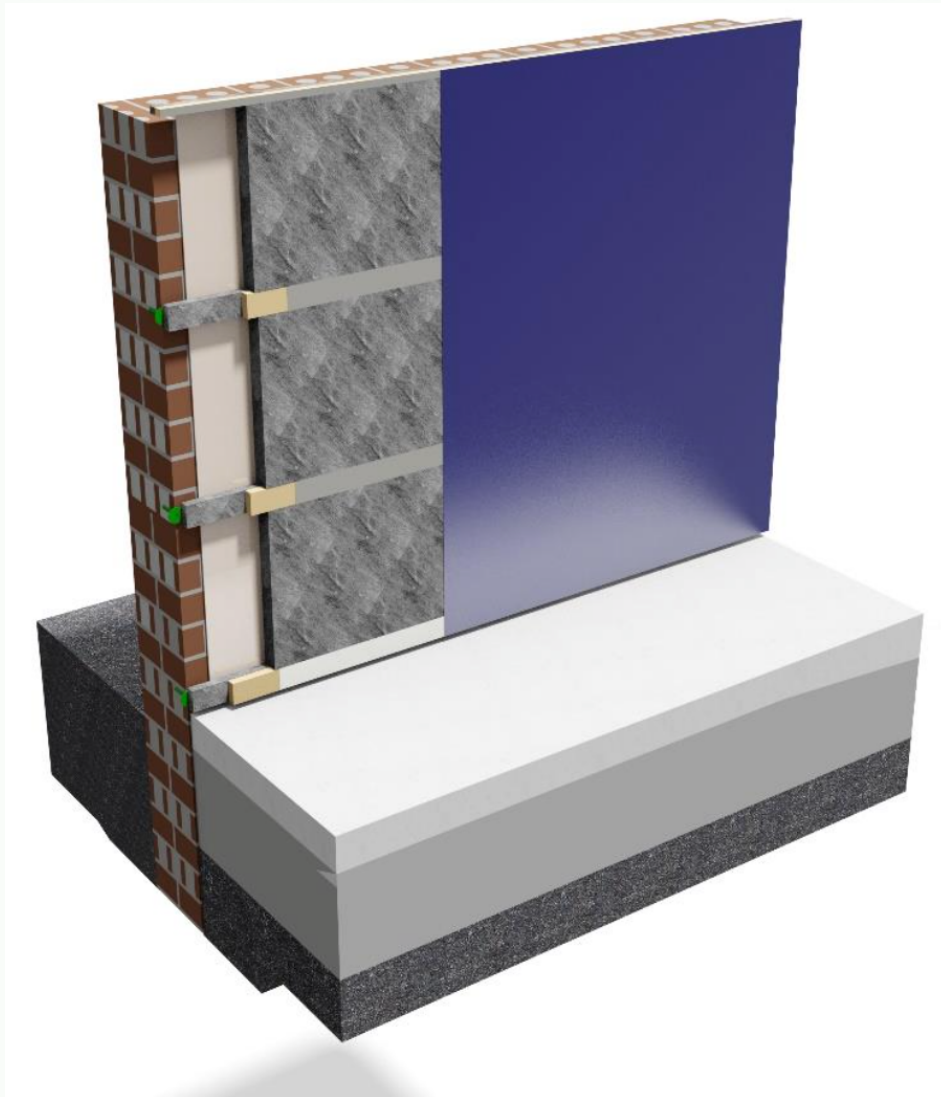


Thermablok AerogelStuds - Single (insulated timber battens)

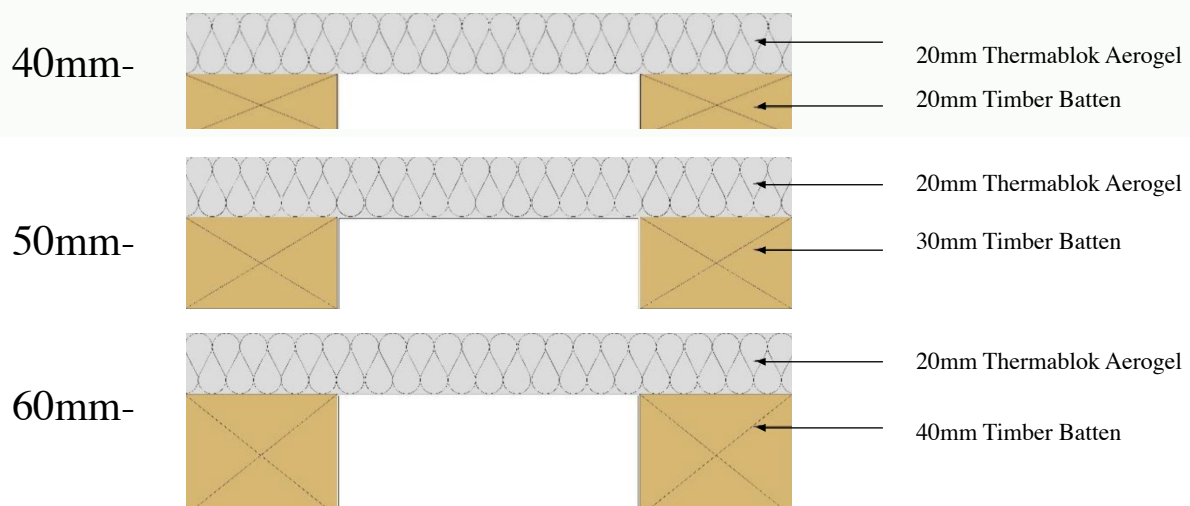


Product Details

Thermablok Aerogel ThermaSlim Stud/Rail IWI Basement System



Thermablok AerogelStuds - Double (insulated timber battens)



Product Details

Thermablok Aerogel ThermaSlim Stud/Rail IWI Basement System

