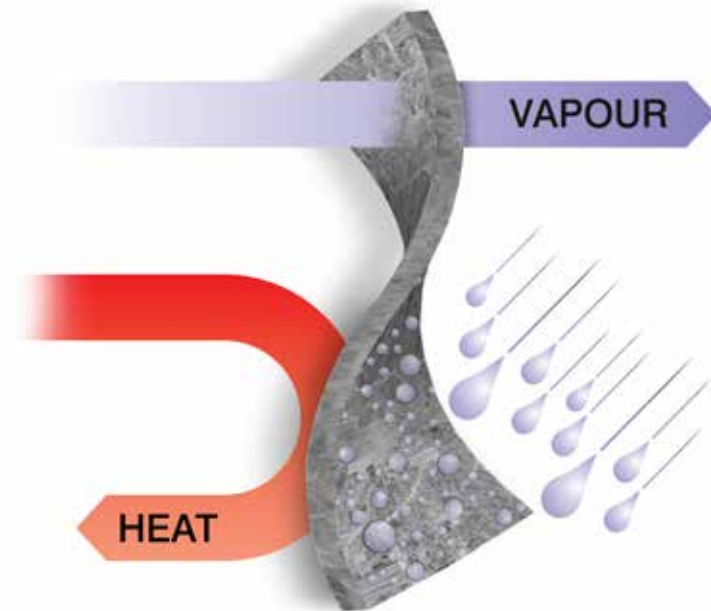


Spacetherm[®] Solutions

SPACETHERM SLENTEX[®] A2 AND SPACETHERM AEROGEL INSULATION
(For Building & Construction)







Spacetherm: Class leading thermal performance with breathability and water resistance

THE KNOWLEDGE TO PRODUCE SOLUTIONS

The A Proctor Group Ltd has been proudly pioneering thermal solutions for over half a century.

Spacetherm® SLENTEX® A2 is the result of extensive research and development to produce a vapour permeable insulation with an A2 fire rating classification. Spacetherm SLENTEX® A2 is classified as Class A2, s1 –d0 according to the Euroclass system, which classifies the reaction to fire performance of building products.

Spacetherm SLENTEX® A2 is a flexible, high-performance, silica aerogel-based insulation material of limited combustibility suitable for use in exterior and interior applications with a thermal conductivity of 0.019 W/mK. Supplied in a variety of finishes, the substantial layers of Spacetherm SLENTEX® A2 meet the requirements for A2 classification (insulation, MgO and plasterboard).

Spacetherm® Aerogel offers specifiers a flexible yet robust insulation blanket solution. Combining a silica aerogel with a fibre matrix, it is a superior material which is suitable for a wide range of challenging applications where thermal performance is crucial.

With a thermal conductivity of 0.015 W/mK, Spacetherm Aerogel's performance credentials qualify it as one of the best insulation materials available worldwide. Engineered for unsurpassed thermal performance in space-critical applications, the product offers low thermal conductivity plus breathability allied to hydrophobic characteristics. Its flexibility and ease of use has proven it as the insulation material of choice in many unique applications and for a wide variety of clients. It is also comforting for specifiers to know it retains its thermal properties for over 50 years.

The A. Proctor Group works closely with clients to establish requirements and deliver effective, tailored solutions.





SPACETHERM SLENTEX® A2



Spacetherm SLENTEX® A2 is a flexible, high-performance, silica aerogel-based insulation material of limited combustibility used for exterior and interior applications. The product is used to optimise the thermal performance and fire properties of façade systems in a number of ways. These include enhancing the thermal performance of the ventilated façade, and addressing thermal bridging in the façade. Spacetherm SLENTEX® A2 is also useful in minimising thermal bridges around windows in areas such as window reveals and roller shutter cases.

With a thermal conductivity of 0.019 W/mK, Spacetherm SLENTEX® A2's performance credentials qualify it as one of the best insulation materials available worldwide. Engineered for space-critical applications, the product offers low thermal conductivity, superior compression strength, plus breathability allied to hydrophobic characteristics. Spacetherm SLENTEX® A2 can also be supplied in a variety of finishes, the substantial layers meeting the requirements for A2 classification (insulation, MgO and plasterboard).

Key Benefits

- Class leading fire performance from an Aerogel insulation
- Superior thermal performance
- Limited combustibility
- Water vapour diffusion open
- Permeable
- Flexible
- Thinnest A2 aerogel insulation available

PHYSICAL PROPERTIES

Reaction-to-Fire	A2-s1, d0 (EN 13501-1:2010)
Thickness	10, 20, 30, 40mm*
Width	up to 1500 mm
Colour	White
Thermal Conductivity	0.019 W/m-K (EN 12667)
Density	190-200 kg/m ³ (EN 1602)
Dimensional Stability	Δ <0.6% @ 70°C, 48hrs (EN 1604)
Compressive Strength	30 kPa at 10% compression (EN 826)
Tensile Strength	16 kPa perpendicular to faces (EN 1607)
Tensile Strength	1085 kPa parallel to faces (EN 1608)
Short Term Water Absorption	0.04 kg/m ² (partial immersion 24hrs) (EN 1609 (A))
Long Term Water Absorption	0.10 kg/m ² (full immersion 48hrs) (EN 12087 (1A))
Water Vapour Permeability, μ-Value	5 (EN 12086)
Organic Content of Spacetherm A2	3.8 Gew.-% (DIN EN 13820)

ETA - 18/001 | Dated 6th December 2018

*other thicknesses available on request



SPACETHERM BLANKET

The ongoing issue of hard-to-treat walls in the UK can be overcome utilising Spacetherm - an ultra-thin insulation for thermal upgrades, saving valuable space without altering the exterior fabric of the building. Spacetherm can be supplied on its own and cut to size or laminated to a number of facings to suit your individual requirements. Its remarkable performance is achieved through the use of flexible aerogel blankets. The insulation used in Spacetherm is material derived from silica gel.

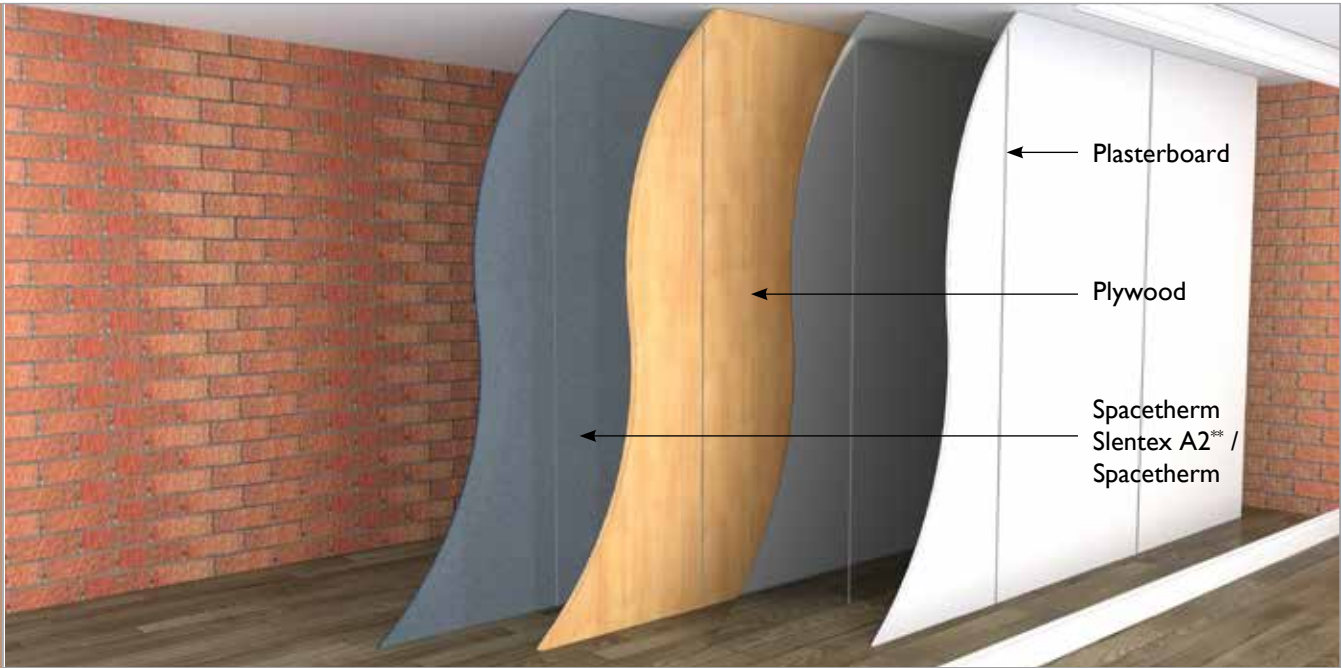
The Spacetherm Blanket consists of unfaced sheets of high performance aerogel composite insulation. The possible applications of the Spacetherm Blanket are virtually limitless as it has been used in doors, shutters, window reveals, boats, swimming pool covers and numerous other applications where thermal performance, space and thickness are critical. Its flexibility and ease of use has proven it as the insulation material of choice in many applications and for a wide variety of clients.

Key Benefits

- Thin insulation system for hard to treat walls
- Class leading performance
- Minimum loss of room space
- 50 year continued thermal performance
- Direct fix to solid walls
- Non-hazardous material
- Easy to install

PHYSICAL PROPERTIES

Blanket size	2400 x 1200mm 1200 x 1200mm
Thickness	5mm / 10mm
Density	0.15 g/cm ³
Weight	0.745 - 1.56 kg/m ²
Thermal Conductivity	0.015W/mK
Water Vapour Permeability, μ -Value	5
Reaction to fire	C - s1 - d0
Specific Heat Capacity	1kJ / kgK



SPACETHERM A2 DIRECTFIX / SPACETHERM DIRECTFIX

Spacetherm A2 Directfix is a high performance laminate which is specifically designed to be fixed directly to the wall. It consists of Spacetherm SLENTEX® A2 insulation blanket bonded to plasterboard, with an additional pre-bonded plywood reinforcement to the plasterboard. This reinforced laminate will reduce the risk of shot-fired nails failing to create a robust fix and will also reduce the risk of drill bit snagging, should you be using a traditional mechanical fixing method.

Ideal for use in applications where low U-values are required but space is at a premium. Spacetherm A2 Directfix is supplied with foil faced plasterboard as standard to reduce condensation. Plain plasterboard is available on request. Spacetherm A2 Directfix lining boards can achieve similar performance to traditional plasterboard laminates, but at a fraction of the thickness, allowing specifiers greater flexibility and higher performance for refurbishment projects. Due to Spacetherm's unique hydrophobic qualities it is also possible to directly fix Spacetherm Laminates to certain existing wall substrates (see installation guide for details).

This product is also available using Spacetherm Aerogel blanket insulation and is available in various thicknesses from 5mm to 20mm (in multiples of 5).

Key Benefits

- Thin insulation system for hard to treat walls
- Class Leading Performance
- Minimum loss of room space
- Direct fix to solid walls
- Constant long term thermal performance 50 years
- Includes an integrated vapour control layer
- Non-Hazardous material
- Class leading fire performance for aerogel insulation

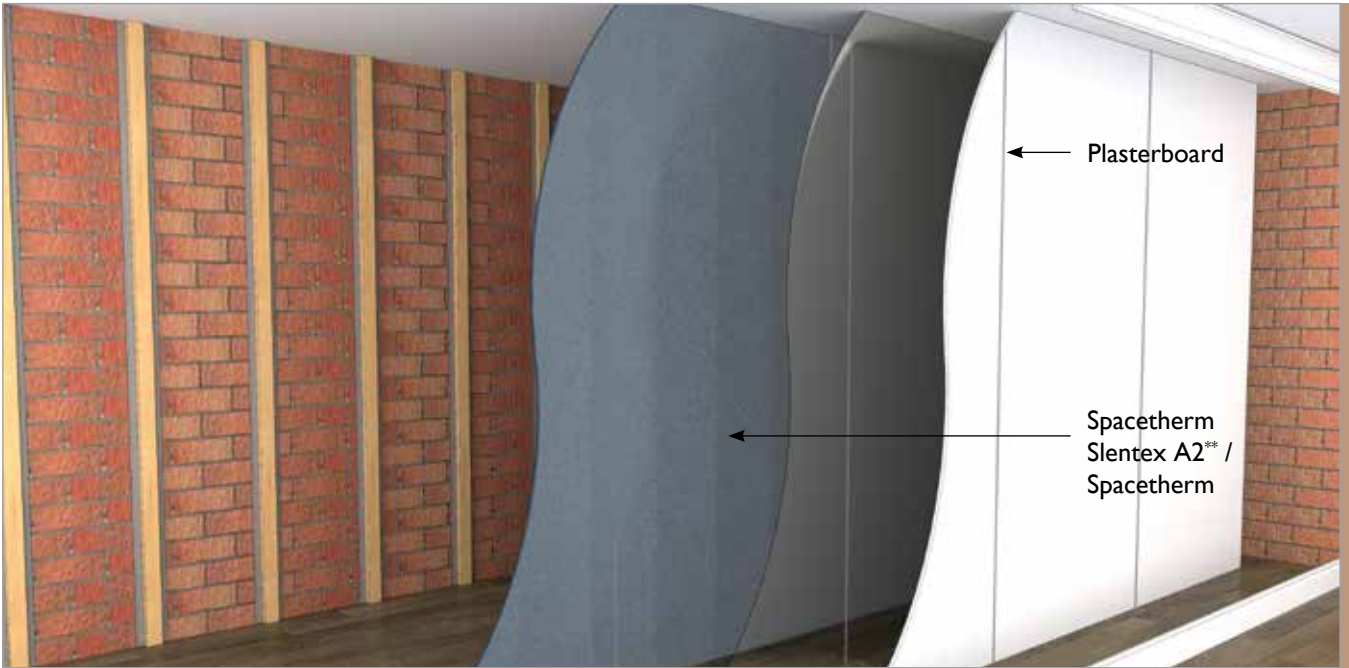
PHYSICAL PROPERTIES



	SPACETHERM A2 DIRECTFIX	SPACETHERM DIRECTFIX
Composition	Spacetherm SLENTEX® A2 Plasterboard / Plywood	Spacetherm Blanket Plasterboard / Plywood
Spacetherm Directfix panel sizes	2400 x 1200mm	2400 x 1200mm
Thickness: Plasterboard Plywood	12.5mm 6mm	12.5mm 6mm
Thickness: Aerogel	10, 20, 30, 40mm*	5, 10, 15, 20mm*
Vapour Control Layer	78.5 MNs/g	78.5 MNs/g
K-Factor: Aerogel	0.019W/mK	0.015W/mK
K-Factor: Plasterboard Plywood	0.190W/mK 0.13W/mK	0.190W/mK 0.13W/mK
Fire Resistance	Spacetherm SLENTEX® A2 (Class A2-s1, d0) Plasterboard (Class A2-s1, d0) Plywood (Class D-s2, d0)	Aerogel (Class C-s1, d0) Plasterboard (Class A2-s1, d0) Plywood (Class D-s2, d0)

*other thicknesses available on request

**colour of insulation component can vary



SPACETHERM A2 WALLBOARD / SPACETHERM WALLBOARD

Spacetherm A2 Wallboard is a high performance laminate which is specifically designed to be fixed to timber straps. It consists of Spacetherm SLENTEX® A2 insulation blanket bonded to plasterboard, and is ideal for use in applications where low U-values are required but space is at a premium. Spacetherm A2 Wallboard is supplied with foil faced plasterboard as standard to reduce condensation. Plain plasterboard is available on request. Spacetherm A2 Wallboard lining boards can achieve similar performance to traditional plasterboard laminates, but at a fraction of the thickness, allowing specifiers greater flexibility and higher performance for refurbishment projects. Due to Spacetherm's unique hydrophobic qualities it is also possible to directly fix Spacetherm Laminates to certain existing wall substrates (see installation guide for details). For other thicknesses, or for U-value calculations for your project, please contact Proctor Technical services.

This product is also available using Spacetherm Aerogel blanket insulation and is available in various thicknesses from 5mm to 20mm (in multiples of 5).

Key Benefits

- Can be installed directly to solid walls or onto straps
- Ideal for hard to treat solid walls
- Ideal solution where maximising internal space is critical
- Class leading fire performance for aerogel insulation

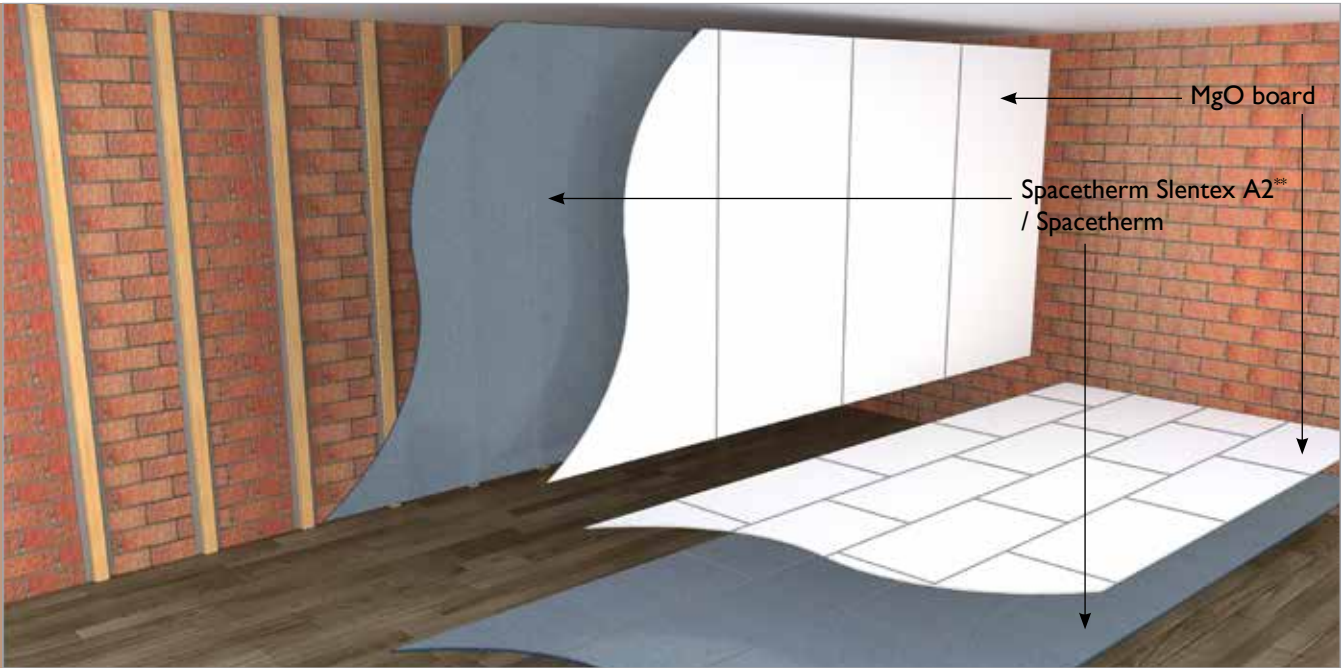
PHYSICAL PROPERTIES



	SPACETHERM A2 WALLBOARD	SPACETHERM WALLBOARD
Composition	Spacetherm SLENTEX® A2 Plasterboard	Spacetherm Blanket Plasterboard
Spacetherm Wallboard panel sizes	2400 x 1200mm	2400 x 1200mm
Thickness: Plasterboard	12.5mm	12.5mm
Thickness: Aerogel	10, 20, 30, 40mm*	5, 10, 15, 20mm*
Vapour Control Layer	78.5 MNs/g	78.5 MNs/g
K-Factor: Aerogel	0.019W/mK	0.015W/mK
K-Factor: Plasterboard	0.190W/mK	0.190W/mK
Fire Resistance	Spacetherm SLENTEX® A2 (Class A2-s1, d0) Plasterboard (Class A2-s1, d0)	Aerogel (Class C-s1, d0) Plasterboard (Class A2-s1, d0)

*other thicknesses available on request

**colour of insulation component can vary



SPACETHERM A2 MULTI / SPACETHERM MULTI

Spacetherm A2 Multi is a high-performance laminate specifically designed to be laid directly onto existing floors & walls. Spacetherm Multi consists of Spacetherm SLENTEX® A2 insulation blanket bonded to a 6mm Magnesium Oxide Board. Spacetherm SLENTEX® A2 blanket is available in various thicknesses from 10mm to 40mm (in multiples of 10).

This solution is ideal for use in applications where low U-values are required and room space is at a premium (such as loft conversions). Spacetherm A2 Multi can achieve similar performance to other insulation systems, but at a fraction of the thickness. This allows specifiers greater flexibility and higher performance for refurbishment projects. For other thicknesses, or for U-value calculations for your project, please contact Proctor Technical services. Full installation guides available to download from the website.

Spacetherm Multi for walls is also available using Spacetherm Aerogel blanket insulation and is available in various thicknesses from 5mm to 20mm* (in multiples of 5).

Key Benefits

- Thin insulation system for floors & walls
- Minimum loss of room space
- Can accept most floor coverings
- Moisture resistant
- One board - multiple applications
- Class leading fire performance for aerogel insulation

PHYSICAL PROPERTIES



	SPACETHERM A2 MULTI	SPACETHERM MULTI	
Composition	Spacetherm SLENTEX® A2 6mm MgO Board	Spacetherm Blanket 6mm MgO Board	
Spacetherm Multi panel sizes	1200 × 600mm 2400 × 1200mm	Floors / WRB / Soffit Lining Walls	1200 × 600mm 2400 × 1200mm
Thickness Spacetherm Multi	From 16mm From 16mm	Floors / WRB / Soffit Lining Walls	From 11mm From 11mm
K-Factor Magnesium Oxide	0.19W/mK	0.19W/mK	
K-Factor Aerogel	0.019W/mK	0.015W/mK	
Vapour Resistance (MgO)	Sd 0.05m	Sd 0.05m	
Fire Resistance	Spacetherm SLENTEX® A2 (Class A2-s1, d0) Magnesium Oxide Board (Class A1)	Aerogel (Class C-s1, d0) Magnesium Oxide Board (Class A1)	

* other thicknesses available on request

**colour of insulation component can vary

SPACETHERM A2 DIRECTFIX U-VALUE - PERFORMANCE READY RECKONER

BASE WALL CONSTRUCTION	OVERALL THICKNESS	SPACETHERM A2 DIRECTFIX	SPACETHERM DIRECTFIX
220mm Brick (no cavity) 13mm Plaster Base Wall Performance 2.12 W/m ² K Spacetherm Directfix	28.5mm	0.92 W/m ² K	0.82 W/m ² K
	33.5mm	-	0.65 W/m ² K
	38.5mm	0.63 W/m ² K	0.54 W/m ² K
	43.5mm	-	0.46 W/m ² K
	48.5mm	0.48 W/m ² K	0.40 W/m ² K
	53.5mm	-	0.36 W/m ² K
	58.5mm	0.39 W/m ² K	0.32 W/m ² K
	63.5mm	-	0.30 W/m ² K
	68.5mm	0.33 W/m ² K	0.27 W/m ² K
	73.5mm	-	0.25 W/m ² K
	78.5mm	0.28 W/m ² K	0.23 W/m ² K
	83.5mm	-	0.22 W/m ² K
	88.5mm	0.25 W/m ² K	0.20 W/m ² K
	93.5mm	-	0.19 W/m ² K
98.5mm	0.22 W/m ² K	0.18 W/m ² K	

SPACETHERM A2 WALLBOARD U-VALUE - PERFORMANCE READY RECKONER

BASE WALL CONSTRUCTION	OVERALL THICKNESS	SPACETHERM A2 WALLBOARD	SPACETHERM WALLBOARD
220mm Brick (no cavity) 13mm Plaster Base Wall Performance 2.12 W/m ² K Spacetherm Wallboard onto timber battens	22.5mm	0.82 W/m ² K	0.74 W/m ² K
	27.5mm	-	0.60 W/m ² K
	32.5mm	0.58 W/m ² K	0.50 W/m ² K
	37.5mm	-	0.44 W/m ² K
	42.5mm	0.45 W/m ² K	0.38 W/m ² K
	47.5mm	-	0.34 W/m ² K
	52.5mm	0.37 W/m ² K	0.31 W/m ² K
	57.5mm	-	0.28 W/m ² K
	62.5mm	0.31 W/m ² K	0.26 W/m ² K
	67.5mm	-	0.24 W/m ² K
	72.5mm	0.27 W/m ² K	0.23 W/m ² K
	77.5mm	-	0.21 W/m ² K
	82.5mm	0.24 W/m ² K	0.20 W/m ² K
	87.5mm	-	0.19 W/m ² K
92.5mm	0.22 W/m ² K	0.18 W/m ² K	

SPACETHERM A2 MULTI U-VALUE - PERFORMANCE READY RECKONER

BASE WALL CONSTRUCTION	OVERALL THICKNESS	SPACETHERM A2 MULTI	SPACETHERM MULTI
220mm Brick (no cavity) 13mm Plaster Base Wall Performance 2.12 W/m ² K Spacetherm Multi onto timber battens	16mm	0.84 W/m ² K	0.77 W/m ² K
	21mm	-	0.62 W/m ² K
	26mm	0.59 W/m ² K	0.52 W/m ² K
	31mm	-	0.45 W/m ² K
	36mm	0.46 W/m ² K	0.40 W/m ² K
	41mm	-	0.36 W/m ² K
	46mm	0.37 W/m ² K	0.32 W/m ² K
	51mm	-	0.29 W/m ² K
	56mm	0.31 W/m ² K	0.27 W/m ² K
	61mm	-	0.25 W/m ² K
	66mm	0.27 W/m ² K	0.23 W/m ² K
	71mm	-	0.22 W/m ² K
	76mm	0.24 W/m ² K	0.21 W/m ² K
	81mm	-	0.19 W/m ² K
86mm	0.22 W/m ² K	0.18 W/m ² K	

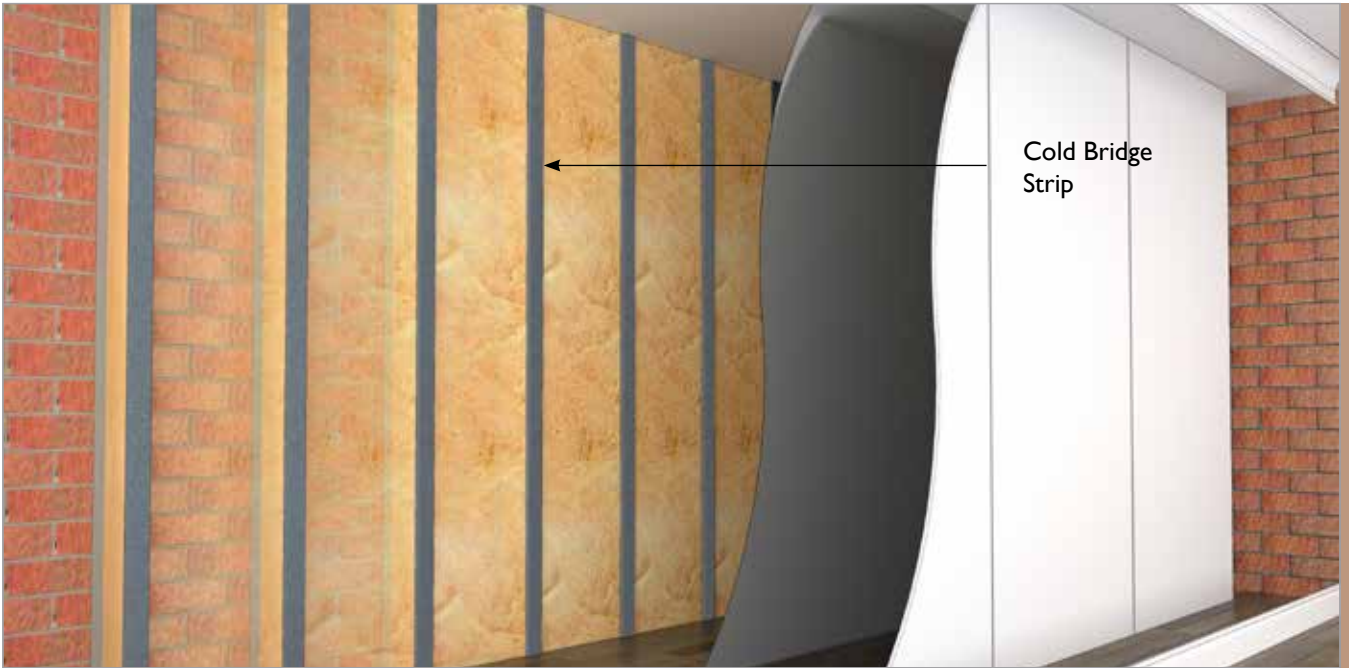
SPACETHERM MULTI U-VALUE - PERFORMANCE READY RECKONER FOR FLOORS

BASE FLOOR CONSTRUCTION	OVERALL THICKNESS	SPACETHERM MULTI
125mm Concrete Slab P/A Ratio = 1 Base Floor Performance = 0.99 W/m ² K	16mm	0.57 W/m ² K
	21mm	0.48 W/m ² K
	26mm	0.41 W/m ² K
	31mm	0.36 W/m ² K

BASE FLOOR CONSTRUCTION	OVERALL THICKNESS	SPACETHERM MULTI
125mm Concrete Slab P/A Ratio = 0.75 Base Floor Performance = 0.85 W/m ² K	16mm	0.52 W/m ² K
	21mm	0.44 W/m ² K
	26mm	0.38 W/m ² K
	31mm	0.34 W/m ² K

BASE FLOOR CONSTRUCTION	OVERALL THICKNESS	SPACETHERM MULTI
125mm Concrete Slab P/A Ratio = 0.5 Base Floor Performance = 0.67 W/m ² K	16mm	0.44 W/m ² K
	21mm	0.38 W/m ² K
	26mm	0.34 W/m ² K
	31mm	0.30 W/m ² K

BASE FLOOR CONSTRUCTION	OVERALL THICKNESS	SPACETHERM MULTI
125mm Concrete Slab P/A Ratio = 0.25 Base Floor Performance = 0.42 W/m ² K	16mm	0.31 W/m ² K
	21mm	0.27 W/m ² K
	26mm	0.25 W/m ² K
	31mm	0.23 W/m ² K



SPACETHERM A2 CBS / SPACETHERM CBS

Designed to prevent cold bridging through a component or element of a structure. Spacetherm A2 CBS (Cold Bridge Strip) consists of Spacetherm SLENTEX® A2 insulation blanket encapsulated in various materials. Spacetherm A2 CBS is an ideal choice for timber or steel frame structures and on request, can be cut to a variety of widths to suit different applications. In addition to timber and steel structures, it can also be used in other applications where cold bridging is an issue.

This product is also available using Spacetherm Aerogel blanket insulation.

Full installation guides available to download from the website.

Key Benefits

- Thin thermal bridge insulation, ideal for timber or steel frame structures
- Fully encapsulated
- Fast and easy to fix with adhesive backing (temporary)
- Available cut to any width, thickness or length
- Class leading fire performance for aerogel insulation

PHYSICAL PROPERTIES

	SPACETHERM A2 CBS	SPACETHERM CBS
Composition	Spacetherm SLENTEX® A2 Various Materials	Spacetherm Blanket Various Materials
Spacetherm CBS length	1.2m or 2.4m	1.2m or 2.4m
Thickness	10mm or 20mm	10mm or 20mm
Width	38, 50, 75 & 100mm	38, 50, 75 & 100mm
K-Factor: Aerogel	0.019 W/mK	0.015 W/mK
Fire Resistance	Spacetherm SLENTEX® A2 (Class A2-s1, d0)	Aerogel (Class C-s1, d0)



Image showing Spacetherm® WRB applied internally to a reveal on an existing external wall structure.

SPACETHERM A2 WRB / SPACETHERM WRB

Spacetherm A2 WRB (window reveal board) is a high-performance laminate specifically designed to be fixed or glued to the existing solid wall at the window reveals. Spacetherm WRB consists of Spacetherm SLENTEX® A2 insulation blanket bonded to plasterboard or Magnesium Oxide board, with or without plywood reinforcement, depending on fixings. It is ideal for use in applications where cold bridges are present, but space is limited. Spacetherm SLENTEX® A2 blanket is available in thicknesses from 10mm to 40mm (in multiples of 10).

This product is also available using Spacetherm Aerogel blanket insulation and is available in various thicknesses from 5mm to 20mm (in multiples of 5).

Various solutions available from Spacetherm range depending on application. Please see physical properties tables on previous pages for relevant product chosen.

Key Benefits

- Ultra thin insulation system for window reveals
- The best thermal performance available
- Minimum loss of space around openings
- Can be used in partnership with traditional dry-lining
- Glued or direct fixed depending on substrate
- Class leading fire performance for aerogel insulation

Spacetherm improves thermal efficiency of Bristol Waterfront apartments

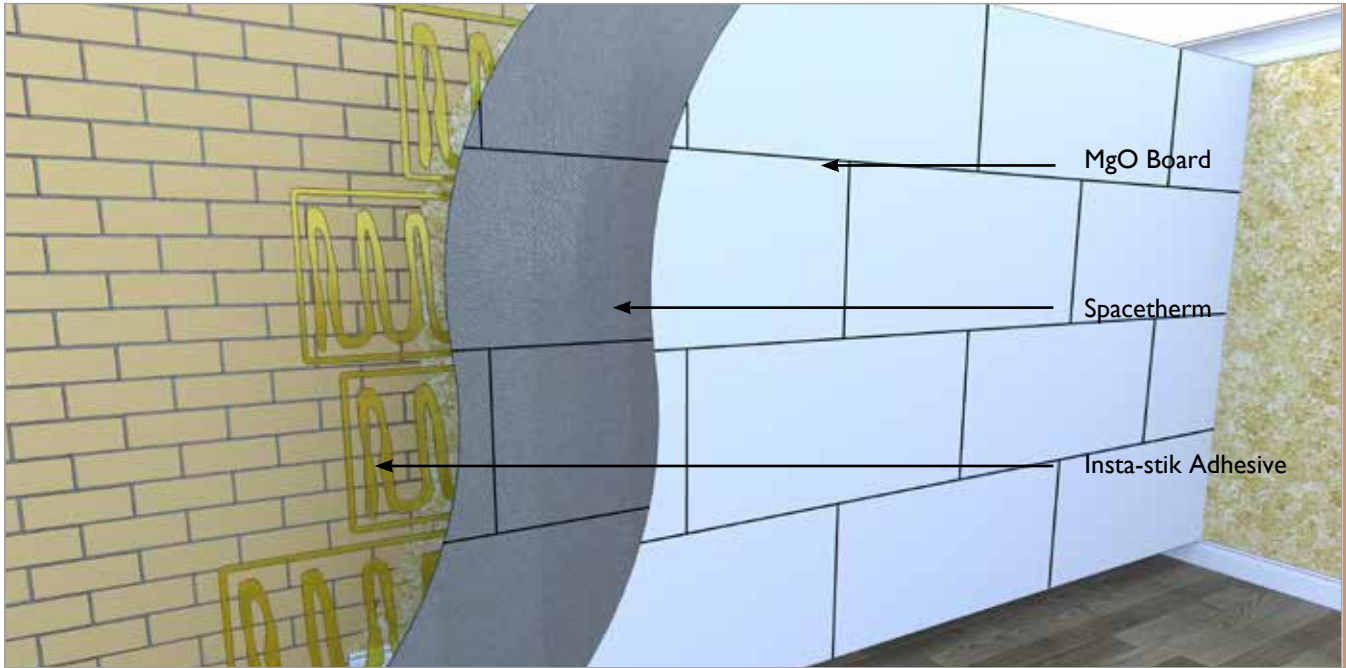
Spacetherm Aerogel Blanket was selected for its superior thermal performance, flexibility and suitability for space-critical applications in an impressive £14m development of Bristol Waterfront apartments.

The Brandon Yard project in Bristol's Harbourside earned client Acorn Property Group, the RESI Award highly commended for Development of the Year in 2018. A mixture of new-build and restoration, the design created by architects AWW Bristol involved the regeneration of a former gasworks site at Brandon Yard, which had remained derelict for almost 40 years, and contains the ruins of two Grade II listed buildings, West Purifier House and Engine House.

A total of 58, one, two and three bedroom apartments will be created, consisting of a new five-storey apartment block designed in keeping with the historic surroundings, with West Purifier House renovated into a three-storey apartment block, and Engine House converted into two houses.

Grégoire Capron, project architect at AWW explains: "The solid wall construction of the two Grade II listed buildings meant that space for internal insulation was limited. We chose to apply Spacetherm Aerogel Blanket a high-performance insulation blanket, capable of achieving extremely low U-values, and providing us with the flexibility required to work around doors, window reveals, and walls with minimum loss of space."





SPACETHERM WALL LINER (WL)



Spacetherm WL (Wall Liner) is a high performance laminate specifically designed to be fixed to internal surfaces of existing solid walls without the need for mechanical fixings. Spacetherm WL consists of Spacetherm aerogel insulation blanket bonded to 3mm Magnesium Oxide Board (MgO), for use in applications where improved thermal performance is required with limited space. Spacetherm WL can achieve similar performance to traditional plasterboard laminates, but at a fraction of the thickness, allowing specifiers greater flexibility and higher performance for refurbishment projects.

Key Benefits

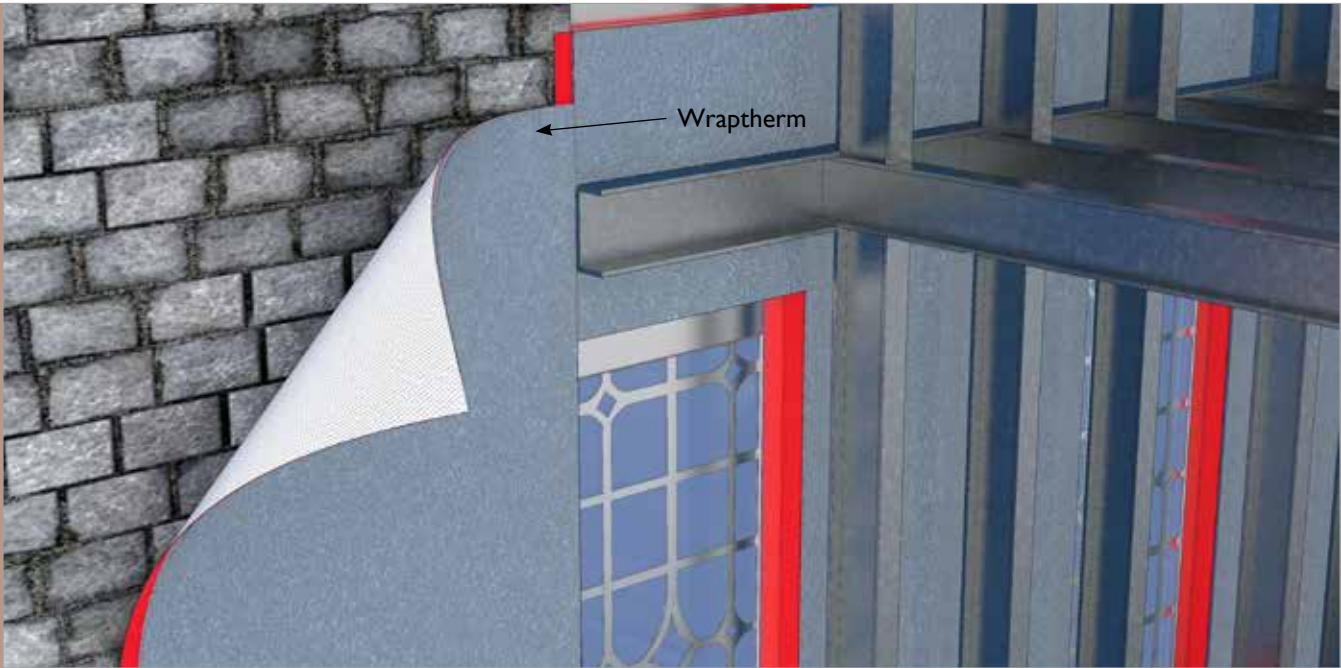
- Thin insulation system for hard to treat walls
- Class leading performance
- Minimum loss of room space
- Constant long term thermal performance 50 years+
- Non-hazardous material
- Easy refurbishment
- No specialist trades required
- Allows wall to breathe

PHYSICAL PROPERTIES

	SPACETHERM WL
Composition	Spacetherm Blanket MgO Board
Dimensions	1200 x 600mm
Thickness	13mm (10mm Aerogel + 3mm MgO)
Weight	4.9 kg/m ²
Fire Resistance	Aerogel (Class C-s1, d0) Magnesium board (Class A1)
Thermal Conductivity	Aerogel 0.015 W/mK Magnesium board 0.19 W/mK
Vapour Resistance	Aerogel Sd 0.05m Magnesium board Sd 0.062m

Accessories

- MgO Primer
- Insta-stik Adhesive



WRAP THERM®

Wraptherm is a composite comprising 10mm Spacetherm Aerogel Insulation blanket bonded to the face of Wraptite® vapour permeable, airtight self-adhesive membrane. Use of Wraptherm provides improved airtightness levels combined with a reduction in thermal bridging. Wraptherm was developed for use in the refurbishment of existing buildings where there was a requirement to enhance both the thermal and airtightness performance of the building but can also be used in new build. Wraptherm can be applied to the internal face of the existing façade, providing a vapour neutral yet airtight layer, fully self-adhered to the substrate layer with the added benefit of a 10mm thick layer of high thermal performance Spacetherm insulation. Over this airtight/thermal composite, framing can be installed with the cold bridging being reduced thanks to the Spacetherm layer. Additional thermal insulation can be included within the frame to meet the u values required for the refurbishment.

The offset nature of the Wraptite component allows robust sealing of the joints in the panel to ensure the continuity, integrity and robustness of the airtight layer:

Key Benefits

- Single product airtightness and thermal bridging solution
- Ideal for Refurbishment and Façade Retention projects
- Water resistant yet vapour permeable membrane
- Leading Airtightness performance
- Reduces thermal bridging
- Continuous airtightness seal
- Tested low vapour resistance

PHYSICAL PROPERTIES

	WRAP THERM
Composition	Spacetherm Blanket Wraptite
Coverage	2400mm x 1200mm or 1200mm x 1200mm
Nominal Thickness	11.5mm
Weight	2.40kg/m ² or 1.2 kg/m ²
Water Vapour Resistance Sd	0.101m (BS EN 12086)
Water Vapour Diffusion μ	8.806 (BS EN 12086)
Thermal Resistance	0.667 m ² K/W (Insulation - membrane negligible)



Nottingham Playhouse Theatre

Nottingham Playhouse is a Grade II Listed theatre with a conventional proscenium layout, seating an audience of 770. It has English Heritage importance, and is an iconic landmark, with hundreds of productions, events and exhibitions taking place throughout the year attracting thousands of visitors.

The challenge for Gleeds Building Surveying Ltd was to reduce the Playhouse's energy bills by making the 1960s building significantly more energy efficient – without damaging or altering the building appearance and without disrupting theatre operations. Preserving the authenticity and integrity of the Playhouse needed to be balanced with the demands of modern use.

Each aspect of the works carried out required planning permission, listed building consent and English Heritage's input and approval. All works were completed within these stringent requirements, incorporated and hidden within the structure, all whilst the theatre was in live operation – no performances had to be cancelled as a result of the works.

The innovative façade design included the use of Spacetherm blanket. 15mm Spacetherm Blanket was used between the Glazing and Board to improve thermal performance of the building. The Spacetherm Blanket consists of unfaced sheets of high performance aerogel composite insulation. The possible applications of the Spacetherm Blanket are virtually limitless as it has been used in doors, shutters, window reveals, boats, swimming pool covers and numerous other applications where thermal performance, space and thickness are critical.

As a result of this work, Spacetherm insulation has provided a 34.30% reduction in heating load which works out a significant cost saving. The Playhouse's charitable education activities have been protected by slashing energy bills enabling those monies to be spent on core activity not energy bills. Indicative readings taken show that it has already cut usage by 30% before the system is fully calibrated and 100% operational.

Tintagel Drive, London

Designed to encourage innovative plans for retrofitting existing social housing, the Retrofit for the Future Competition aims to devise a blueprint for low carbon social housing refits. It is being delivered by the Technology Strategy Board (TSB), a government-backed organisation that invests in technological innovation.



Following submission of 'A Whole House Low Carbon Solution for Everyday Living', Gifford's Building Sustainability team, led by Director Glen Irwin, was selected by TSB to apply its eco-retrofit proposals to 11 Tintagel Drive.

The engineer at Gifford first contacted the A. Proctor Group's technical department providing their target u-values for the eco retrofit project, and requested input on what type of insulation they could use to reach the targets. Also a concern was the thermal bridging in vital junctions, and requested a solution for doing this detailing.

With this information, the A. Proctor Group's technical department were able to provide floor and wall u-value calculations and a condensation risk analysis with options of either insulation between the joists or over the existing floor.

To achieve a u-value of 1.12 W/m²K, Spacetherm Directfix was used. Its ultra-thin insulation saves valuable space without altering the exterior fabric of the building. Spacetherm Directfix is insulation bonded to a Plywood reinforced Plasterboard for internal refurbishment of exterior walls. The plywood reinforcement allows for a direct shot fire fixing to be used making the installation quicker and simpler.



“I believe the success of the A. Proctor Group is down to a solid foundation of innovation backed up by an excellent, loyal and committed team, every one of them playing an important role in our continued success. Scotland provides us with a unique platform to launch our ideas, systems and products. I am fiercely proud of this heritage and our brand.”

Keira Proctor
Managing Director, A. Proctor Group Ltd

www.proctorgroup.com | +44 (0) 1250 872261
contact@proctorgroup.com

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