

Stylite

Bespoke and standard **Partial - Fill** - Plustherm & White EPS

Construction - Insulation & building materials

Technical information

V3_16

Pr_25_71_63_26



TECHNICAL

Cavity Wall Partial - Fill Insulation



STYLITE EXPANDED POLYSTYRENE

From the idea to point of delivery SPI will guide you through the process making it easy for you to get the expanded polystyrene you want when you need it.

Offering technical and design advice on every aspect of your order from product specifications developed by our experts to delivery of your product organised by our dedicated transport department. For more information on the full process from sample production to bespoke product modelling.



Quality

With our expert production and sales team we can offer you quality service and products at some of the cheapest rates available.



Expanding

SPI is always investing in new technologies and products to stay at the forefront of the industry.



Technical

Our sales and technical team are always on call to answer all your EPS queries.



Bespoke

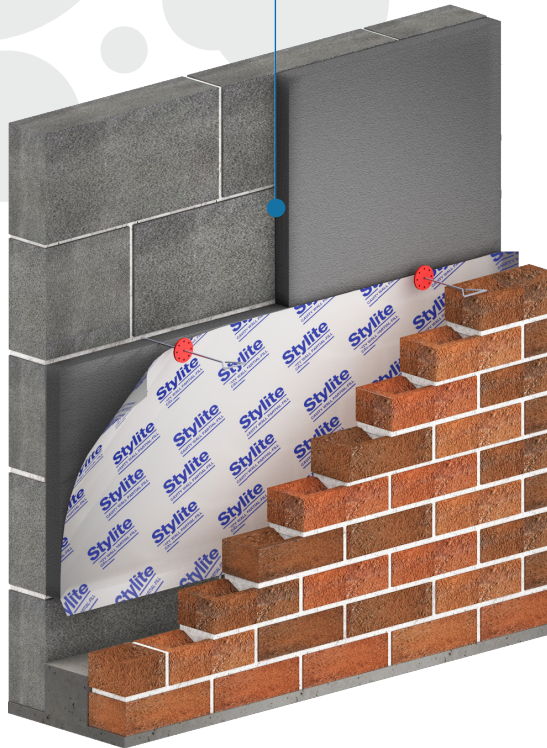
SPI will guide you through any bespoke project, moulded or contour cut, from start to finish.

Contents

- 01 - Product overview
- 01 - Typical build-up
- 02 - Installation guide
- 03 - Extra Info
- 03 - Typical U-Values
- 04 - Technical specification
- 04 - Certification

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Cavity Wall Partial-Fill Insulation

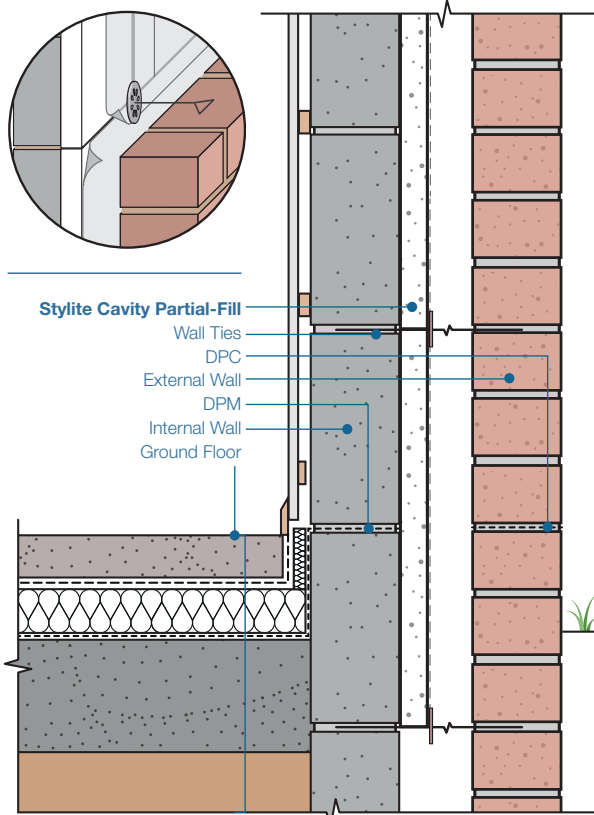
- Available with or without foil face
- Tongue & Groove or plain Profiled edges
- Reduces cold bridging
- Lightweight
- Stops water penetration
- Quick & easy installation
- Use in commercial & residential property
- No water absorption
- Minimal water permeability
- 100% recyclable
- No HFC's, CFC's or HCFC's



Stylite Partial-Fill Cavity Wall Insulation is to be incorporated into a cavity of a new build masonry wall. The partial-fill boards are designed to minimise any water penetration, protecting the inner leaf of the building, while providing high-performance thermal properties. The bonded

foil face provides thermal radiation reflection, which is equivalent to an extra 20mm of Stylite Plustherm. The foil creates a watertight layer over the insulation which is sealed at horizontal and vertical joints. **For more information on Stylite EPS call us now on 01274 691 777 or visit our website at www.stylite.com.**

Typical Stylite Cavity Partial-Fill build up



Compatibility

Expanded Polystyrene is compatible with most chemicals and materials. For more information about how EPS interacts with different chemicals check www.styrene.biz/downloads/SPI_Chemical_Behaviour.pdf

Durability

EPS is rot proof and durable, and will remain an effective insulation for the life of the construction. EPS is not affected by bacteria, moulds or fungi, and will not provide nutrient value for insects or vermin.

Environmental Safety

EPS is non-toxic, non-irritant, odourless and It does not contain CFC's or HCFC's. EPS has a Global Warming Potential (GWP) of zero and an Ozone Depletion Potential (ODP) of zero.

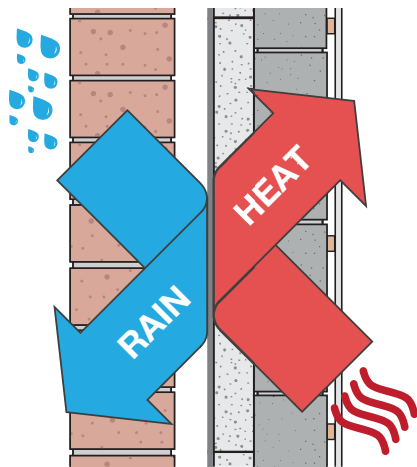
Reaction To Fire Classification

Stylite will achieve reaction to fire Euro-class F. However, the classification achieved when installed in a build will be considerably better. We also supply an FRA grade which contains a Fire retardant additive and achieves reaction to fire Euro-class E. The fire rating of a wall containing EPS will depend heavily on the type and nature of the build up.

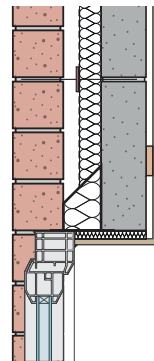
Stylite Partial-Fill Cavity Design

Stylite Partial Fill Cavity Boards are specially designed to provide thermal insulation whilst protecting the inner wall structure from any penetrating moisture. Using the foil face with the overlap at edges to create a completely sealed cavity which protects the internal leaf. The Foil also acts as a thermal radiation barrier, reflecting heat back into the

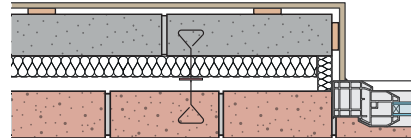
building. Below are details that are typically used with partial fill cavity insulation boards. The use of cavity closer units are required to protect the cavity and stop cold bridging at the end of external walls. The partial fill cavity boards should be butted at corners ensuring full coverage of the cavity.



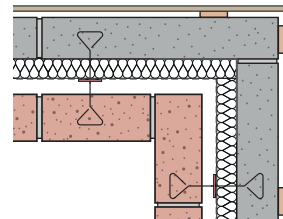
Cavity Lintels



Cavity Closers



Cavity Corners

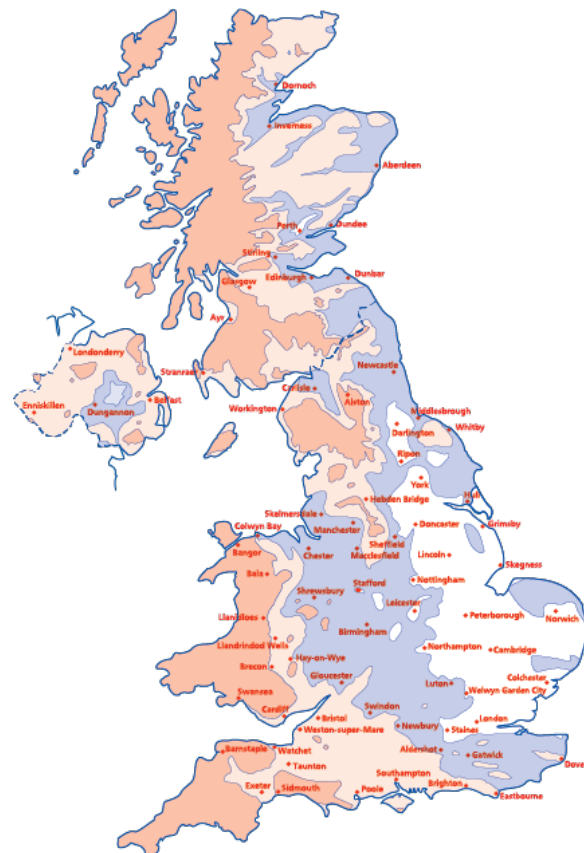


NHBC Compliance With Wind Driven Rain Index

When building a wall with a residual cavity, to comply with NHBC, you should consider the wind driven rain index which indicates that in certain areas of the UK minimal cavity thicknesses are required. The Exposure levels are split into 4 different zones, for very severe exposure you must ensure a 75mm cavity and for severe exposure you must ensure a 50mm cavity unless stated specifically within and accredited documentation or certification.

Key	Exposure Zones	Approx Wind Driven Rain (litres / m ² per spell)
	1 Sheltered	less than 33
	2 Moderate	33 to less than 56.5
	3 Severe	56.5 to less than 100
	4 Very Severe	100 or more

Variations to the exposure zones shown here can only be made by site specific calculations using BS 8104, and the table above. Image provided by NHBC.





Stylite Partial Fill Cavity Wall Insulation Typical U-Values

The following table demonstrates typical U-Values achieved based on specific wall build-ups. To ensure correct U-values the thickness of the cavity insulation boards have been calculated on a 50mm cavity. The following U-Value calculations are produced in accordance with the “conventions for U-Value calculations”. To ensure the

validity of your calculations, each U-Value should be generated according to [BS EN ISO 6946](#) , [BS EN 1996-3 : 2006](#). [Default values of BRE 443](#)

For a specific U-Value calculation or pricing information on stylite Partial-Fill Cavity Insulation contact our technical and sales teams on 01274 691 777.

Stylite Partial Fill Cavity Insulation - Foil Faced

Internal Finish	Lightweighth Block	Dense Block
W/mK² / Thickness	Plustherm	
0.15	140	160
0.18	110	130
0.22	80	100
0.28	55	70
0.30	45	65

Stylite Partial Fill Cavity Insulation - Unfoiled

Internal Finish	Lightweighth Block	Dense Block
W/mK² / Thickness	Plustherm	
0.15	160	180
0.18	130	150
0.22	100	120
0.28	75	90
0.30	65	85

Calculations based on values of : (Dense Concrete Block : 1.06*), (Clay Brickwork : 0.77*), ((AAC) Block : 0.17*), ((SAAC) Block : 0.11*), (Plasterboard : 0.21), (Gypsum Render : 0.8*), (Gypsum based plaster : 0.18*) *W/mK



Technical Specification

Features	EPS 70	Plustherm	Standard
Thermal Conductivity ($\lambda_{90/90}$)(Wm ⁻¹ K ⁻¹)	0.038	0.030	EN 13163
Length Tolerance	L1	L1	EN 822
Width Tolerance	W1	W1	EN 822
Thickness Tolerance	T1	T1	EN 823
Planarity Tolerance	P2	P2	EN 825
Squareness	S1	S1	EN 824
Bending Strength (kPa)	BS115	BS150	EN 12089
Reaction to Fire	F	E	EN 13501-1
Water Vapor Permeability (mg/ Pa.h.m)	0.015 - 0.030	0.009 - 0.020	EN 13163
Water Vapour Diffusion Resistance Factor μ	20-40	30-70	EN 13163
Dimensional Stability	DS (N) 5	DS (N) 5	EN 1603
Compressive Stress @ 10% (kPa)	70	100	EN 826
Compressive Stress @ 1 % (kPa)	21	30	EN 13163
Tensile Strength (kPa)	TR100	TR150	EN 1607
BREEAM Rating	A+	A+	BRE

Typical Dimensions	Length mm	Width mm	Depth mm
Stylite Cavity Partial-Fill	1200	450	50 > 200

EN 13163 : 2012 | BS EN 13501 : 1 : 2007 | BS EN 6946

Uniclass Code
Pr_25_71_63_26

Recycling

Styrene Packaging & Insulation Ltd provide a scrap EPS pick-up to help us recycle as much polystyrene as possible back into suitable products, please download a copy of our recycling policy to find out how to get involved.

Certification

SPI have real pride in the products we supply. We surpass all current regulations and independent certification that ensures a quality product. For full details of our certifications please visit our website at www.styrene.biz



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Available Stylite Products

Building				Bespoke Cutting & Moulding
Floors Flooring insulation boards Suspended floor insulation Stylite Plustherm Underfloor heating boards Stylite Gridboard Void Fillers Ventilated Voidfillers	Walls External wall insulation EWI Railboards Cavity fill bead Cavity fill boards SIP's insulation Insulated plasterboard Stud cavity Insulation	Roofing Flat inverted Insulation SIP's insulation Tapered flat insulation Corrugated panels Rafter insulation Laminated Insulation Bonded Insulation	Civil Engineering Marine pontoon Stylite clayfill Voidfillers Special Laminates Laminate precut Laminate precut PVC	
Packaging				
Seed tray Produce box Fish box	Corner protectors Edge protectors Cradles	Channels Cut boxes Tubes	Wedge Flat pad Bottle packs	
Domestic - Commercial - Industrial - Agricultural - Horticultural - Educational				

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Stylite
INSULATION SOLUTIONS

To the best of our knowledge, the technical data contained herein is true and accurate at the date of issuance and is subject to change without prior notice. Please consult your structural engineer directly for design details. The proper use and application for this product must be the responsibility of the user.

Styrene Packaging & Insulation Ltd is registered in England, Company No.1800539 | VAT Registration No.408763928

Stylite

Stylite Partial-Fill Cavity wall insulation boards are available with or without the foil faced laminate, and with or without a tongue and grooved edge to protect joints.

Expanded polystyrene is hydrophobic making it the perfect material to resist moisture away from the internal walls of buildings. The foil face will act as a thermal radiation reflection barrier effectively achieving the same U-Value you could achieve using an extra 20mm of plustherm in the cavity. Stylite Plustherm will remain an effective insulation for the lifespan of the build and will never loose any thermal performance over time.

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