

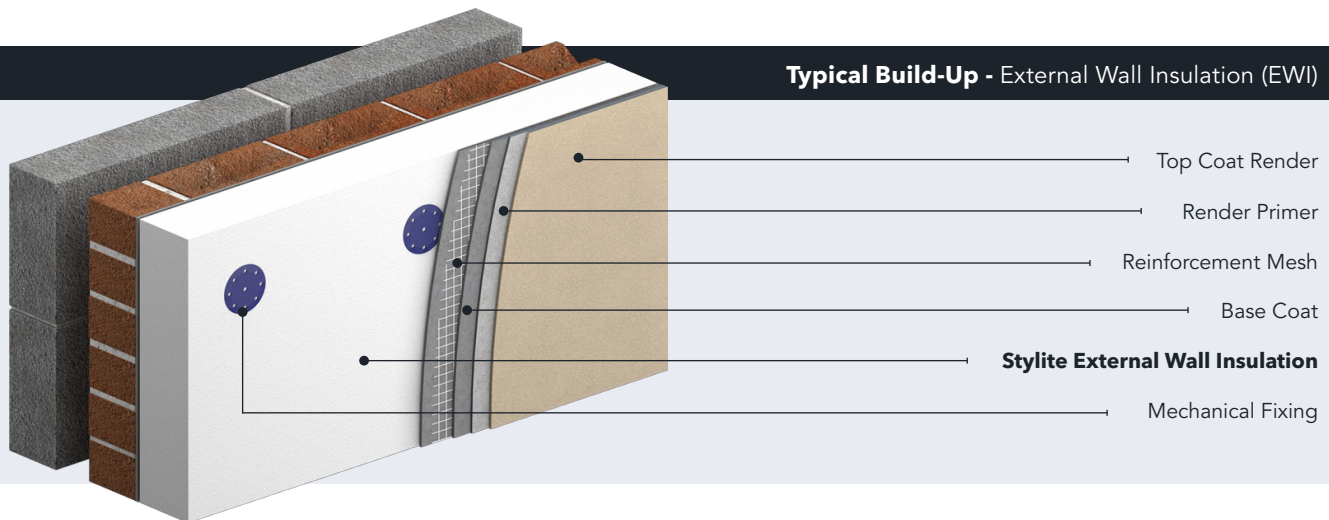
# Stylite®

## EXTERNAL WALL INSULATION (EWI) DATASHEET

Pr\_25\_71\_63\_26 - 1\_060720



Expanding Possibilities



### Standard Product Attributes

|              |                          |
|--------------|--------------------------|
| Length       | Up to 1200mm             |
| Width        | Up to 600mm              |
| Thickness    | 25 - 250mm               |
| Coverage     | 0.72m <sup>2</sup>       |
| Grades       | EPS 70 - 100 & Plustherm |
| Edge Profile | Plain edge profile       |

All our Stylite External Wall Insulation Boards are typically manufactured to one standard size, at 1200 x 600mm. The typical thickness of Stylite EWI boards, for residential applications, is 90mm for PlusTherm graphite enhanced EPS and 120mm for standard EPS70 FRA. Other sizes and thicknesses may be available on request.

### Design Standards

All our Stylite EWI Insulation is manufactured in accordance with **BS-EN-13163-2012+A2-2016**. Under a Quality Management System accredited to **ISO 9001:2015** and an Environmental Management System accredited to **ISO 14001:2015**.

### Product Overview

Stylite External Wall Insulation Boards are manufactured from Expanded Polystyrene (EPS) and can be used with many different types of External Wall Insulation (EWI) systems to meet or exceed Building Regulations for thermal performance.

The main areas of application for EWI are refurbishment and new build projects for residential, domestic and commercial. During the retrofit of existing buildings Stylite External Wall Insulation Boards are used to provide a thermal upgrade and reduce condensation problems, whilst the rendered finish also improves the appearance. In new build applications an EWI system provides thermal properties but also allows specifiers to design buildings with contemporary façades.

### Product Benefits

- Suitable for all wall applications up to 18m
- Lambda from as low as **0.030W/mK**
- Suitable for Residential & Domestic builds
- Compatible with adhesive and mechanically fixed systems
- Fire retardant grade EPS
- No reduction in performance over time
- Lightweight, quick & easy to install
- Minimal water absorption & permeability
- 100% recyclable
- BRE Green Guide Rating of A+

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## Typical Applications

Stylite Expanded Polystyrene insulation boards are the perfect solution to insulate an external wall. They can be easily fixed to the existing wall substrate to instantly improve the appearance and performance of the wall. Insulating the external side of the wall as opposed to the internal side of the wall will reduce the risk of any interstitial condensation forming within the wall.

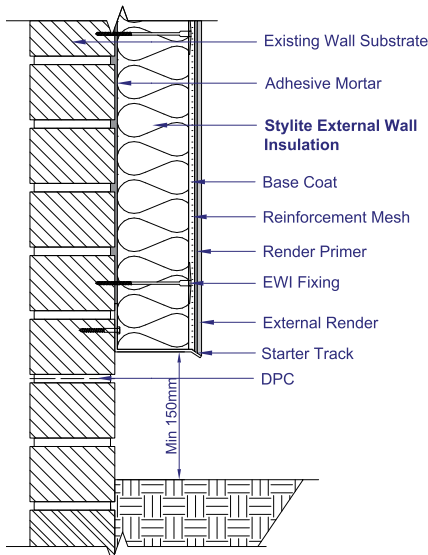
Stylite External Wall Insulation is compatible for use with many different wall constructions, from solid brickwork to timber frame walls. Typically external wall insulation is covered with a rendered finish which will protect the insulation, this can be applied in many different ways depending on the system used. Stylite EWI boards can also be used on rail or drained cavity EWI systems.

## Typical Details

There are many EWI systems on the market, each with a slightly different way of insulating and finishing the external envelope of a building. The details below show two of the most common systems which utilise adhesive and mechanical fixings to secure the insulation to a brick wall or steel frame, and finished with a weatherproof render.

## Typical Application

Stylite EWI - Brickwork - Render



## Typical U-Values

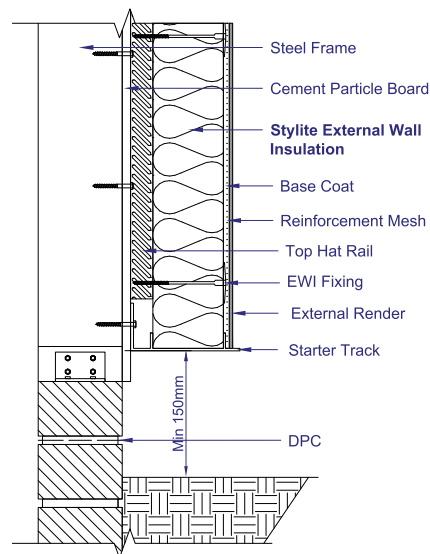
The tables here show the thickness of Stylite External Wall Insulation Boards required to achieve Building Regulation u-values based on typical domestic refurbishment and non domestic new build projects in different parts of the UK.

| Domestic Refurbishment - Brickwork |      |                         |               |
|------------------------------------|------|-------------------------|---------------|
| U-value (W/m <sup>2</sup> K)       |      | Thickness Required (mm) |               |
|                                    |      | EPS 70                  | PlusTherm EWI |
| England & Wales                    | 0.30 | 120                     | 90            |
| Scotland                           | 0.22 | 160                     | 130           |

- 13mm internal plaster with conductivity of 0.57 W.m-1.K-1.
- 225mm thick solid brick masonry wall with conductivity of 0.77 W.m-1.K-1.
- Stylite EPS70 with conductivity of 0.038 W.m-1.K-1 or Stylite
- PlusTherm with conductivity of 0.030 W.m-1.K-1.
- 16mm render finish with conductivity of 1.00 W.m-1.K-1.
- Configuration of 100% single beams at full centres.
- All other parameters are default values from BRE Report BR 443 : 2006.

## Typical Application

Stylite EWI - Brickwork - Render



| Non Domestic New Build - Steel Frame Drained Cavity |      |                         |               |
|---|------|-------------------------|---------------|
| U-value (W/m <sup>2</sup> K)                        |      | Thickness Required (mm) |               |
|   |      | EPS 70                  | PlusTherm EWI |
| England & Wales                                     | 0.30 | 60                      | 45            |
| Scotland  | 0.23 | 75                      | 60            |

- 12.5mm internal plaster with conductivity of 0.25 W.m-1.K-1.
- Light steel frame with 400mm stud spacing and 150mm depth incorporating insulation with conductivity of 0.040 W.m-1.K-1
- 12mm cement particle board with conductivity of 0.23 W.m-1.K-1.
- 15mm unventilated drained cavity incorporating vertical spacer rail top hat profiles with thermal resistance of 0.180 m<sup>2</sup> K/W.
- 8.5mm external render finish with conductivity of 1.00 W.m-1.K-1.
- All other parameters are default values from BRE Report BR 443 : 2006.

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## Specification Clause

The external wall insulation shall be Stylite External Wall Insulation, EPS \_\_\_\_, \_\_\_\_mm thick, manufactured to BS EN 13163-2012+A2-2016 by Styrene Packaging & Insulation Ltd (SPI). The insulation is to be installed in accordance with SPI's recommendations and installation guide.

## Refer to clauses:

### M21 Insulation with rendered finish

210 External Wall Insulation System

## Durability

Expanded Polystyrene is rot proof, Expanded Polystyrene is not affected by bacteria, moulds or fungi, and will not provide nutrient value for insects or vermin.

Expanded Polystyrene does not lose any performance over time and will remain an effective insulation for the life of the building.

## Compatibility

Expanded Polystyrene should be kept away from hydrocarbons, solvents and volatile substances, however, Expanded Polystyrene is compatible with most chemicals and materials found in common construction environments. For more information, a full list of chemical behaviours is available on our website.

Stylite Expanded Polystyrene should not come into contact with any PVC cables. This is to avoid plasticizer migration which causes PVC cables to become brittle and fragile. Any PVC cables should be protected within a suitable conduit or with a suitable air gap.

## Moisture Resistance & Breathability

Stylite Expanded Polystyrene is hydrophobic and highly resistant to the absorption of water but will allow a very minimal amount of water vapour transfer. Expanded Polystyrene is often utilised with a suitable damp proof membrane or vapour control layer to avoid any unwanted water ingress.

## Reaction To Fire Classification

Stylite Expanded Polystyrene will achieve reaction to fire Euroclass F. However, the classification achieved when installing in a building will be considerably better. We also supply FRA grades which contain a Fire Retardant Additive and achieve reaction to fire Euroclass E.

## Sustainability

Our Stylite Expanded Polystyrene does not contain HFC's, CFC's or HCFC's. Expanded Polystyrene has a Global Warming Potential (GWP) of zero and a low O-Zone Depletion Potential

(ODP). Our Expanded Polystyrene is 100% recyclable. For more information on our recycling policy, you can contact our office to find out more, or alternatively visit our website.

## BRE Green Guide Rating

Expanded Polystyrene achieves a green guide rating from **A+**. For a full overview of grades and ratings please see technical specifications overleaf.

## Delivery & Storage

The boards are delivered to site in packs, wrapped in polythene. They must be protected from prolonged exposure to sunlight and UV rays. Packs should be stored either under cover or protected with opaque light-coloured polythene sheeting. The products must be stored fully supported and flat on a firm, level base, to prevent bowing.

The products must not be exposed to open flame, care should still be taken to ensure EPS doesn't come into contact with any source of ignition.

## Safety

Expanded Polystyrene is non-toxic, non-irritant and odorless, making it completely safe to handle. It can be cut on site using a fine tooth saw or a hot wire cutter. For more information refer to our Safety Data Sheet available on our website.

## Standard Pack Sizes

| Full Loads - 120 Packs                                 |                 |                            |        |                            |
|--|-----------------|----------------------------|--------|----------------------------|
| Standard Board Sizes - 1200 x 600 - 0.72m <sup>2</sup> |                 |                            |        |                            |
| Thickness (mm)   | Boards Per Pack | Coverage (m <sup>2</sup> ) | Boards | Coverage (m <sup>2</sup> ) |
| 50   | 12              | 8.64                       | 1,440  | 1,036.8                    |
| 90   | 6               | 4.32                       | 720    | 518.4                      |
| 120  | 4               | 2.88                       | 480    | 345.6                      |

**Note** - Pack and load quantities are based on the maximum capacity of an articulated lorry and are for guidance only. Exact quantities will be confirmed at time of enquiry or order when vehicle type and availability is known.

Other sizes and thicknesses are available on request.

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| Physical Properties                         | EPS 70 FRA    | Plustherm EWI |               |
|---|---------------|---------------|---------------|
| Thermal Conductivity (W/mK)                 | 0.038         | 0.030         | 0.030         |
| Compressive Strength @ 10% (kPa)            | 70            | 70            | 100           |
| Bending Strength (kPa)                      | 115           | 115           | 150           |
| Water Vapour Permeability (mg Pa.h.m)       | 0.015 - 0.030 | 0.015 - 0.030 | 0.009 - 0.020 |
| Water Vapour Diffusion Resistance ( $\mu$ ) | 20-40         | 20-40         | 30-70         |
| Shear Strength (kPa)                        | SS160         | SS55          | SS180         |
| Shear Modulus (kPa)                         | GM140         | N/A           | GM150         |
| Tensile Strength (kPa)                      | TR100         | N/A           | TR140         |
| Reaction to Fire - FRA EPS                  | E             | E             | E             |
| Length Tolerance                            | L2            | L2            | L2            |
| Width Tolerance                             | W2            | W2            | W2            |
| Thickness Tolerance                         | T2            | T2            | T2            |
| Flatness Tolerance                          | P5            | P5            | P5            |
| Squareness                                  | S2            | S2            | S2            |
| Dimensional Stability                       | DS (N) 5      | DS (N) 5      | DS (N) 5      |
| BRE Green Guide Rating                      | A+            | A+            | A+            |

**Please :** The information contained within this datasheet is true and accurate at the date of issuance and is subject to change without prior notice. It is for guidance only the proper use and application of this product is the responsibility of the user.

All Stylite Expanded Polystyrene is manufactured to the following standards - **BS EN 13163:2012+A2:2016 - BS EN 13501-1.**



### Styrene Packaging & Insulation Ltd

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