



Stylite Passive House Foundation

- **Meets and exceeds building regulations**
- **Eliminates the critical wall-to-floor cold bridge**
- **Lambda from 0.030 W/mK**
- **Modular off-site design and manufacture**
- **Save time and money**
- **Lightweight**
- **Cost effective**
- **No reduction in performance**
- **Use in commercial & residential property**
- **Minimal water absorption & permeability**
- **100% recyclable**
- **No HFC's, CFC's or HCFC's**

Designed for ground floor foundation applications

Stylite Passivehaus Foundation EPS will save time on the design and installation of your foundation system while also saving drastically on material costs too. Having an insulated foundation system means that the cold bridging that occurs between the ground and the building is eliminated creating a much more thermally efficient build. Stylite Passivehaus foundation reduces underfloor heat loss through rising walls from 65% to 12%.

The EPS units are designed to your specific plot layouts and manufactured off-site, to be delivered ready to install. The system uses small pegs and clips to install the pieces. Effectively your Stylite passivehaus foundation system is a way to wrap you build in insulation, insulating from the ground up.

Passivehaus Standard

The Passivehaus standard is a comprehensive low energy standard intended primarily for new buildings, the specific standard to meet for the individual components is $<0.010 \text{ Wm}^2\text{K}$. In a Passivehaus thermal comfort is achieved to the greatest practical extent through the use of passive measures which can be applied not only to the residential sector but also to commercial, industrial and public buildings.



Stylite Passivehaus Foundation Typical Build-Ups

Timber Frame & EWI applications

Using a timber frame wall with added EWI is a popular way to construct builds, as a lot of this work is now manufactured off-site and constructed onsite the construction time is minimal.

Timber Frame & Block-work

Another popular construction method is to use timber frame structures with an outer leaf of brick or blockwork, this is often in the form of SIP's panels or lightweight timber frame work, again manufactured to suit off-site then installed on delivery. This may require the addition of an additional strip concrete strip foundation to carry the external skin.

Insulated Concrete Form Wall

The development of building methods has seen a rise in the use of insulation materials to build with in different ways. An ICF wall is another popular way to construct the superstructure on top the foundation system. It consists of Lego-like bricks made out of EPS that slot together to build the wall structure, concrete is the poured into the gap in the centre of the EPS bricks to form the Insulated concrete form.

Typical U-Values Using Stylite Passive Foundation

P/A	0.2	0.4	0.6	0.8
U-Value W/m ² K	0.09	0.10	0.10	0.10

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

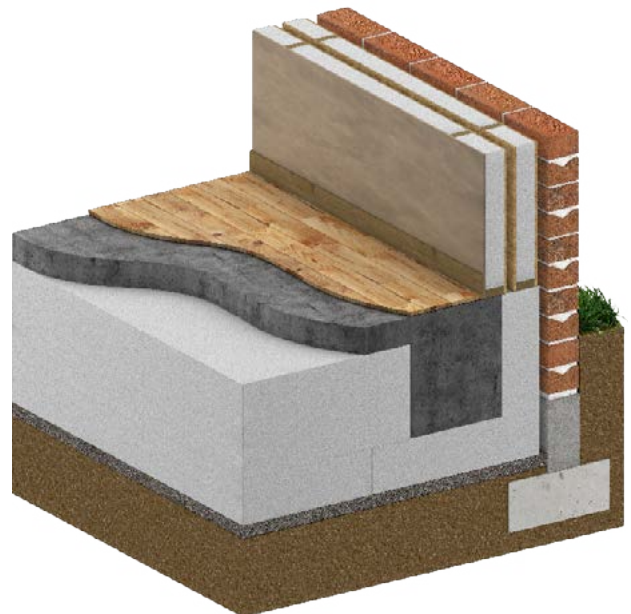
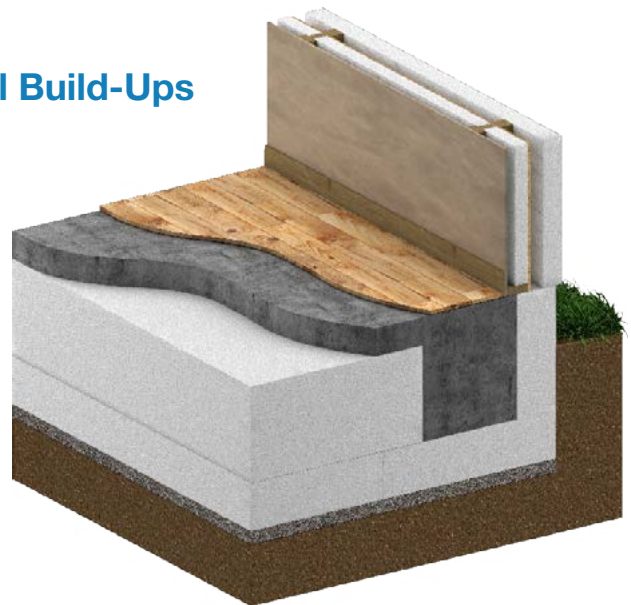
EPS is rot proof and durable, and will remain an effective insulation for the life of the construction. EPS is not affected by bacteria, moulds or fungi, and will not provide nutrient value for insects or vermin.

Environmental Safety

EPS is non-toxic, non-irritant and odourless. 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.



Stylite Passivehaus Foundation Installation

Stylite Passivehaus Foundation Insulation is extremely quick and easy to install. The foundation is usually installed and ready to build superstructures within at most 2

days based on a typical sized 4 bedroomed house. These Installation steps are to be used as guidelines and should be checked by a site structural engineer or other persons qualified

Step 1 - The topsoil should be removed and minimum 150 mm thick hardcore installed and compacted.

Step 2 - Lay your EPS units in the pre-designed layout, using the specialized metal clips to hold pieces together.

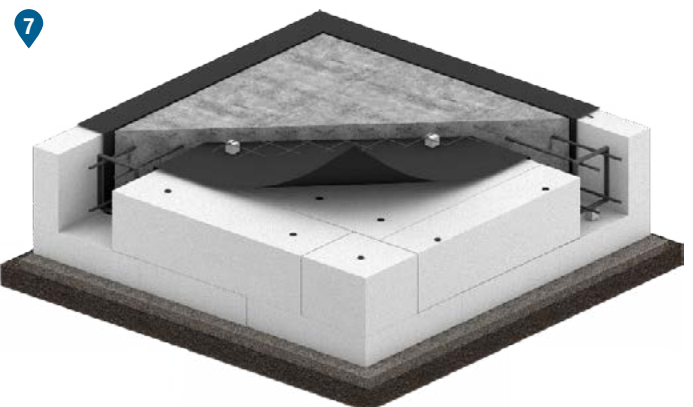
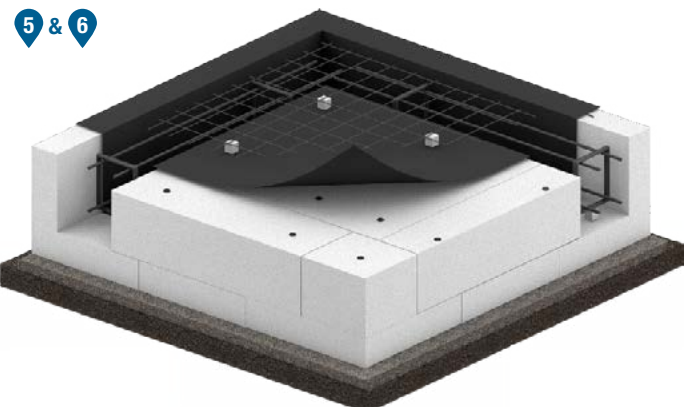
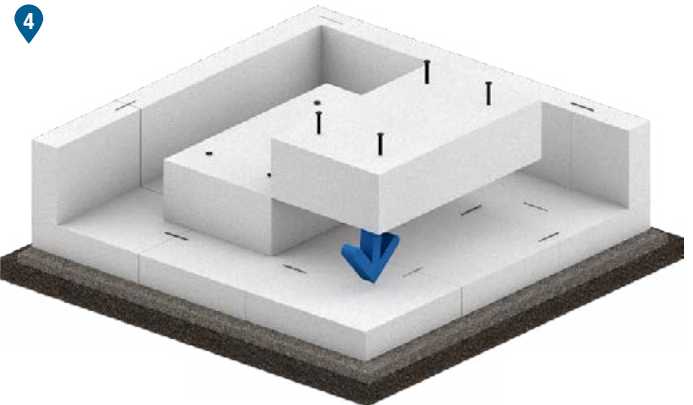
Step 3 - Your plain boards may now be laid in a break bonded pattern to complete the first layer.

Step 4 - The second layer can then be installed (break bonded) on top using the specialized plastic pegs to secure the slab to the underlying sheet.

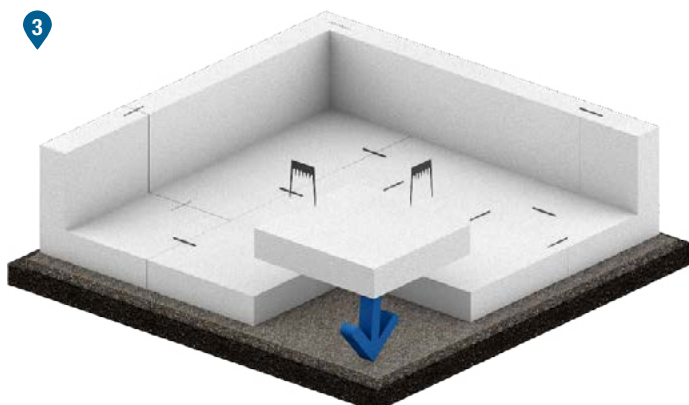
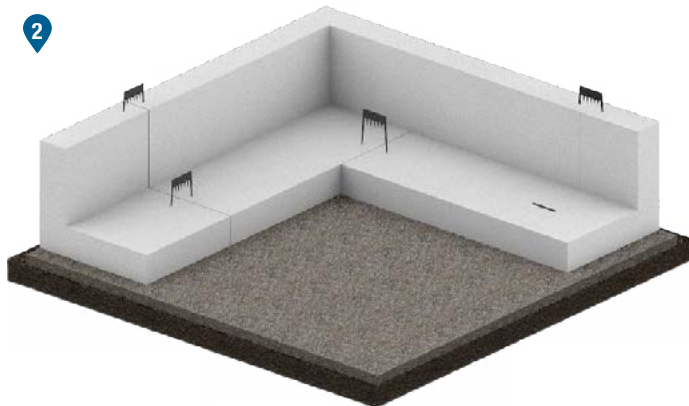
Step 5 - Once your second layer of EPS slab, has been laid you may install a VCL if applicable.

Step 6 - If required, you may now install reinforcement to sit within the screed topping.

Step 7 - The screed can now be poured and left to set, once cured you can then install any superstructures.



For more information on the different typical build ups achievable using Stylite Passivehaus Foundation with included details for bearing and non-bearing wall details. **Stylite Passivehaus Foundation standard details.**



Technical Specification

Features	EPS 70	EPS 100	EPS 250	EPS 300	Plustherm	Standard
Thermal Conductivity ($\lambda_{90/90}$) (Wm ⁻¹ K ⁻¹)	0.038	0.036	0.034	0.034	0.030	EN 13163
Length Tolerance	L2	L2	L2	L2	L2	EN 13163
Width Tolerance	W2	W2	W2	W2	W2	EN 13163
Thickness Tolerance	T2	T2	T2	T2	T2	EN 13163
Planarity Tolerance	P5	P5	P2	P2	P5	EN 13163
Squareness	S2	S2	S2	S2	S2	EN 13163
Bending Strength (kPa)	115	150	300	350	150	EN 12089
Reaction to Fire	F	F	F	F	E	EN 13501-1
- Virgin Bead	E	E	E	E	E	EN 13501-1
Water Absorption (mg Pa ⁻¹ h ⁻¹ m ⁻¹)	0.015 - 0.030	0.009 - 0.020	0.006 - 0.015	0.006 - 0.015	0.009 - 0.020	EN 13163
Dimensional Stability	DS (N) 5	DS (N) 5	DS (N) 5	DS (N) 5	DS (N) 5	EN 1603
Compressive Strength @ 10% (kPa)	70	100	250	300	100	EN 13163
Compressive Strength @ 1 % (kPa)	21	30	75	90	30	EN 13163
BRE Rating	A+	A+	A+	A+	A+	BRE
Element No.	815320022	815320023	N/a	N/a	1315320016	BRE

Dimensions	Length mm	Width mm	Thickness mm
Perimeter L-Shapes	1200	400	100
Plain boards	1200	600	100 < 200

EN 13163 : 2012 | BS EN 13501 : 1 : 2007 | BS EN 1603 : 2013 | BS EN 12089 : 2013

Classification code : Pr_20_93_51_28

Recycling

Here at 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

We have real pride in the products we supply that is why we go above and beyond to ensure that we surpass all current regulations and offer all the relevant certifications to stand by our expanded polystyrene products. For full details of our certifications please visit our website at www.styrene.biz



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