

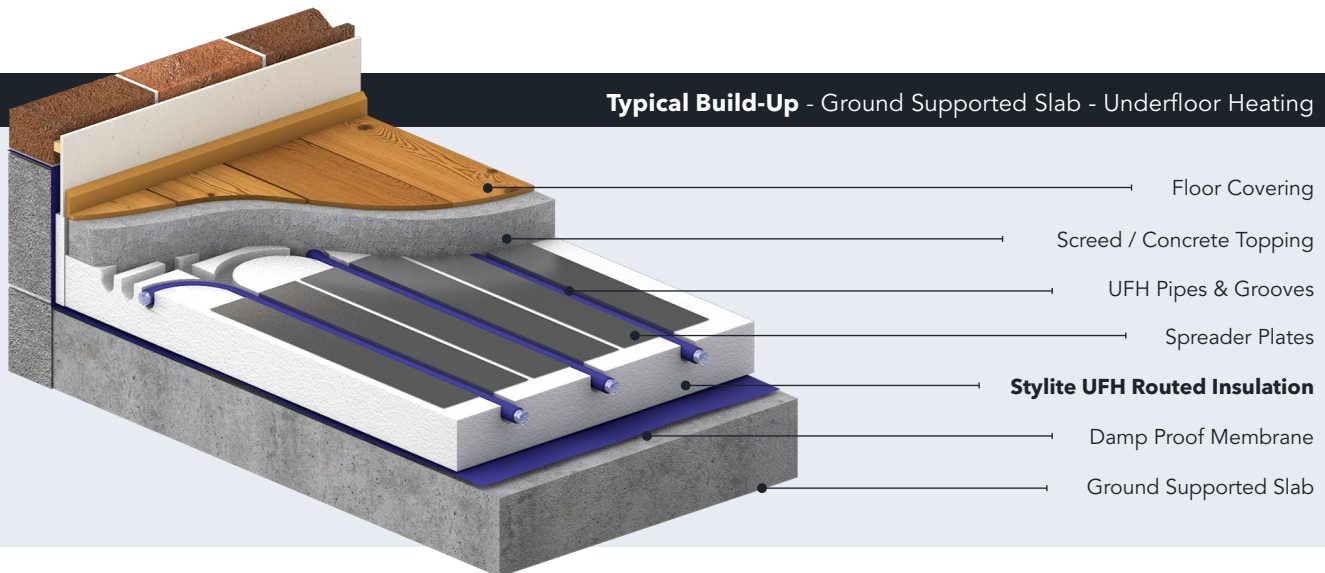


UFH ROUTED UNDERFLOOR HEATING INSULATION DATASHEET

Pr_25_71_63_26 - 5_170820



Expanding Possibilities



Standard Product Attributes

Length	1200mm
Width	Up to 1200mm
Coverage	1.44m ²
Thickness	25 - 200mm
Grades	EPS 70 - 300 & Plustherm
UFH Layouts	UFH 01 - 038 & Bespoke

Our Stylite UFH Routed Insulation Boards are manufactured to a standard size of 1200 x 1200mm, which are compatible with different pipe centres however we can cut boards to fit in between wooden floor joists. With a range of different groove layouts, our Stylite UFH Routed Insulation offers a wide range of possible pipe designs. We can also route bespoke groove layouts and board sizes to suit individual designs.

Design Standards

All our Stylite UFH Routed Underfloor Heating 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 UFH Routed insulation boards are a low profile EPS board that allow underfloor heating pipes to be laid directly into the insulation layer, with no need for fixings. They are available in a range of grades offering an excellent choice of thermal conductivity and compressive strength properties.

Boards are available in standard layouts with varying pipe centres, crosses and returns. The grooves fit 16mm pipes but can also be routed at 18mm to accommodate spreader plates. If you can't find a specific layout to suit your requirements we can design bespoke panels.

Need a unique U-Value or help specifying Stylite Flooring Insulation, Give us a call now on : **01274 691 777**

Product Benefits

- ☑ Low profile, high performance
- ☑ Lambda from as low as **0.030W/mK**
- ☑ Quick & easy installation of UFH pipes
- ☑ Multiple standard layouts available
- ☑ Bespoke groove layouts
- ☑ Available in a range of EPS grades
- ☑ Lightweight, quick & easy to install
- ☑ Minimal water absorption & permeability
- ☑ 100% recyclable
- ☑ No HFC's, CFC's or HCFC's

UFH ROUTED UNDERFLOOR HEATING INSULATION DATASHEET

PR_25_71_63_26 - 5_170820

Stylite®

Typical Applications

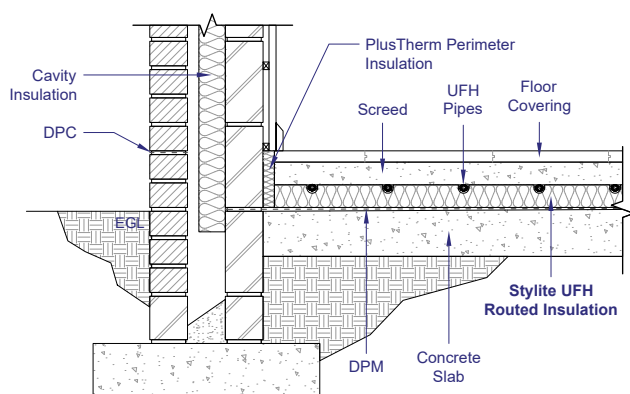
Stylite UFH Routed Insulation boards are designed for use with many different applications of underfloor heating from concrete slabs, floating floors to suspended timber floors. A range of the typical build ups can be seen below.

Concrete Floors - Concrete Topping

The screed and timber floor finish can be applied to in-situ slabs, precast planks and suspended beam and block floors. When the pipes are covered with a concrete topping which will effectively retain heat and transfer it evenly throughout the floor.

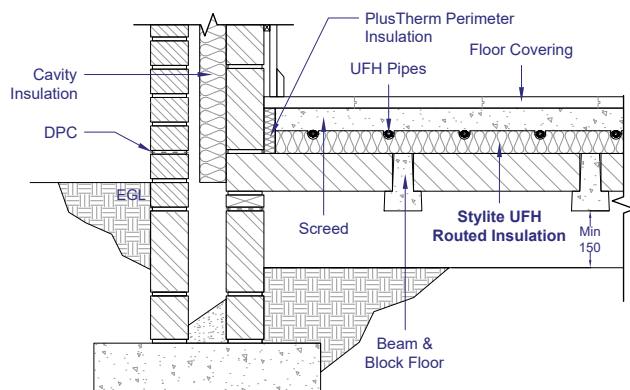
Typical Application

Stylite UFH Routed Insulation - Slab On Ground



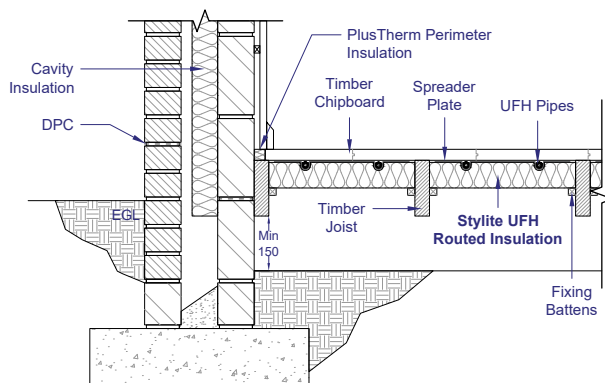
Typical Application

Stylite UFH Routed Insulation - Suspended Beam & Block



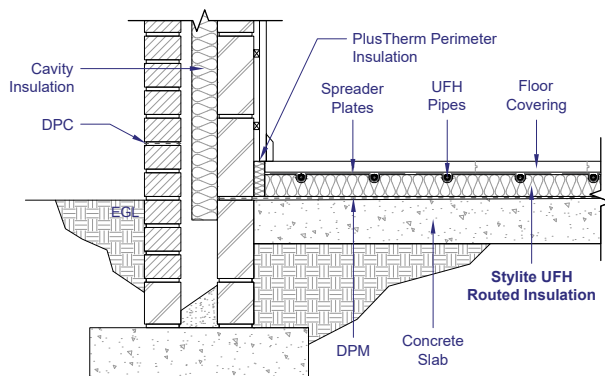
Suspended Timber Floor - Timber Chipboard Finish

There are a few different methods of installing UFH Routed boards within timber joist floors, the most common is seen below where spreader plates are used in contact with the floor finish to effectively and evenly distribute the heat.



Floating Floors - Timber Floor Finish

Floating floors can be built-up similarly to the suspended timber floors, with spreader plates coming in direct contact with the floor finish. This allows the heat to be evenly distributed throughout the floor.



UFH ROUTED UNDERFLOOR HEATING INSULATION DATASHEET

PR_25_71_63_26 - 5_170820

Stylite®

Typical U-Values

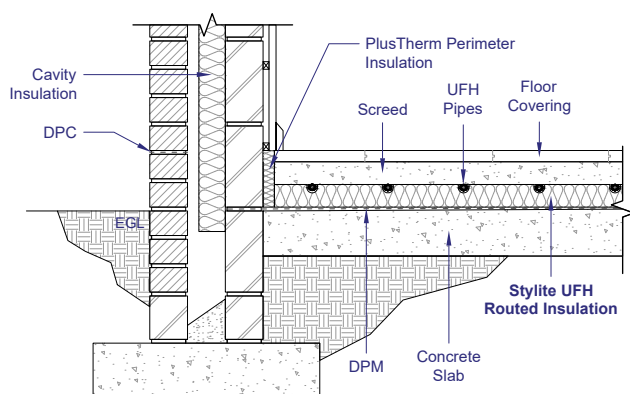
Stylite UFH Routed Insulation is manufactured in thicknesses from 20mm to 200mm in standard 5mm increments, other thicknesses may be available on request. To comply with stringent Building Regulations designers may need to allow for an additional layer of Stylite Flooring Insulation to achieve a target u-value for the whole floor element.

The tables below show the thickness of Stylite UFH Routed Insulation required to achieve typical u-values. Calculated to BS EN ISO 13370:2017 and BRE Report BR 443:2006.

A standard thickness of Stylite UFH Routed plus an additional layer of Stylite Flooring Insulation is required for target U-value

Typical Application

Stylite UFH Routed Insulation - Slab On Ground



- ☑ 100 mm concrete slab with conductivity 2.06 W.m-1.K-1
- ☑ 65 mm concrete screed with conductivity 1.15 W.m-1.K-1.
- ☑ All other parameters are default values from BRE Report BR 443 : 2006.

P/A - 0.2	Required Thickness (mm)			
U-value (W/m ² K)	EPS 70	EPS 100	EPS 150 - 300	PlusTherm
0.25	35	30	30	25
0.22	50	50	50	40
0.20	65	60	60	55
0.18	85	80	75	70
0.15	120	120	115	100
0.13	165	155	145	130
0.10	230	220	210	190

P/A - 0.4	Required Thickness (mm)			
U-value (W/m ² K)	EPS 70	EPS 100	EPS 150 - 300	PlusTherm
0.25	80	75	70	65
0.22	100	90	85	75
0.20	110	105	100	90
0.18	130	125	120	105
0.15	170	165	160	135
0.13	215	200	185	165
0.10	300	275	260	230

P/A - 0.6	Required Thickness (mm)			
U-value (W/m ² K)	EPS 70	EPS 100	EPS 150 - 300	PlusTherm
0.25	95	90	85	75
0.22	120	110	105	90
0.20	130	125	120	105
0.18	150	145	135	125
0.15	190	180	170	150
0.13	230	215	205	180
0.10	320	300	275	245

P/A - 0.8	Required Thickness (mm)			
U-value (W/m ² K)	EPS 70	EPS 100	EPS 150 - 300	PlusTherm
0.25	105	100	95	85
0.22	125	120	110	100
0.20	140	135	125	110
0.18	160	155	145	130
0.15	200	190	180	160
0.13	235	225	215	190
0.10	320	300	285	250

Need a unique U-Value or help specifying Stylite Flooring Insulation, Give us a call now on : **01274 691 777**

UFH ROUTED UNDERFLOOR HEATING INSULATION DATASHEET

PR_25_71_63_26 - 5_170820



Specification Clause

The underfloor heating insulation shall be Stylite UFH Routed Insulation, ___ mm thick, EPS Grade ___, 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:

K11 Rigid sheet flooring/ sheathing/ decking/ sarking/ linings/ casings -

- 115 Battered Plywood Floating Floor
- 125 Battered Particleboard Floating Floor
- 135 Battered Oriented Strand Board Floating Floor
- 145 Battered Cement Bonded Particleboard Floating Floor
- 215 Plywood Floating Floor
- 225 Particleboard Floating Floor
- 235 Oriented Strand Board Floating Floor
- 245 Cement Bonded Particleboard Floating Floor
- 295 Floating Floor System

M10 Cement based levelling/ wearing screeds

- 290 Floating Construction

M13 Calcium sulphate based levelling screeds

- 260 Floating Construction

T90 Heating systems - domestic

- 450 Insulation To Pipelines To Control Heat Loss

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.

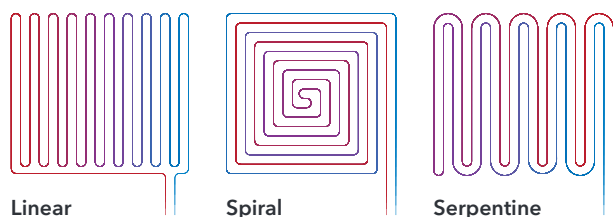
UFH ROUTED UNDERFLOOR HEATING INSULATION DATASHEET

PR_25_71_63_26 - 5_170820

Stylite®

Typical Pipe Layouts

There are many different ways a pipe layout might be designed, it all depends on the size and shape of the floor where it is being installed. The heat distribution of the different designs changes depending on the pattern used. Below are typical examples of patterns used when designing the pipe layouts, all of which can be achieved using the board examples given below.



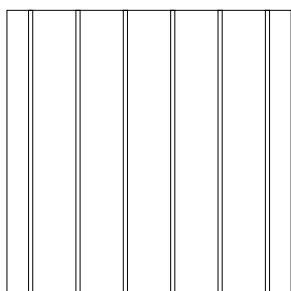
UFH Board Layouts

We offer a range of standard board layouts which can be used to create pipe designs, all with varying types of corners, crosses and returns. The different boards offer all the elements needed to put together a range of different pipe layouts like the ones above. Download the full range of boards we have to offer from our website; www.styrene.co.uk/downloads

200mm Centre Boards

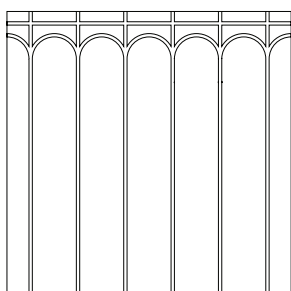
01

Straights only



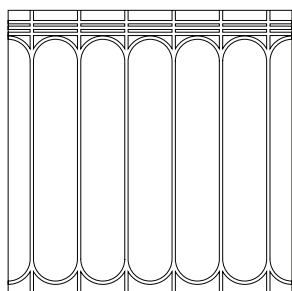
10

1 Return & 1 Cross



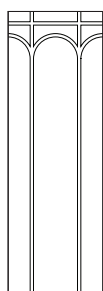
09

2 Return & 3 Cross



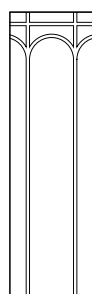
10A - 400

1 Return & 1 Cross



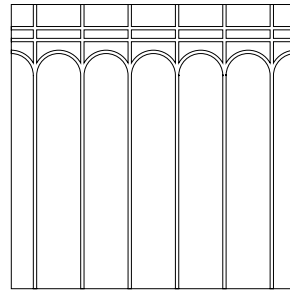
10B - 350

1 Return & 1 Cross



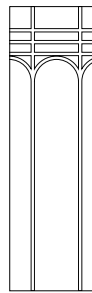
13

1 Return & 2 Cross



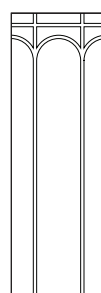
13A - 300

1 Return & 2 Cross



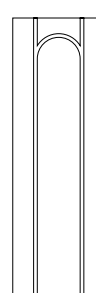
13B - 600

1 Return & 75 Bay



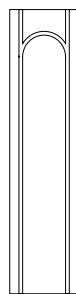
23 - 395

1 Return



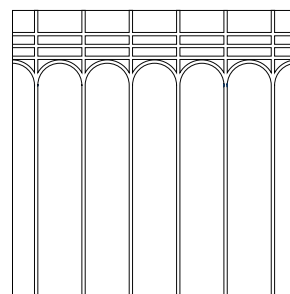
25 - 295

1 Return



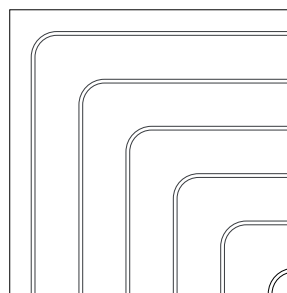
26

1 Return & 3 Cross



36

90° Bend



More board designs are available on our website or call us to request a bespoke pipe layout design.



UFH ROUTED UNDERFLOOR HEATING INSULATION DATASHEET

PR_25_71_63_26 - 5_170820



Expanding Possibilities

Physical Properties	EPS 70	EPS 100	EPS 150	EPS 200	EPS 250	EPS 300	PlusTherm
Thermal Conductivity (W/mK)	0.038	0.036	0.034	0.034	0.034	0.034	0.030
Compressive Strength @ 10% (kPa)	70	100	150	200	250	300	100
Bending Strength (kPa)	115	150	200	250	350	450	150
Water Vapour Permeability (mg Pa.h.m)	0.015 - 0.030	0.009 - 0.020	0.009 - 0.020	0.006 - 0.015	0.006 - 0.015	0.006 - 0.015	0.009 - 0.020
Water Vapour Diffusion Resistance (μ)	20-40	30-70	30-70	40-100	40-100	40-100	30-70
Reaction to Fire - Standard EPS	F	F	F	F	F	F	E
Reaction to Fire - FRA EPS	E	E	E	E	E	E	E
Length Tolerance	L2	L2	L2	L2	L2	L2	L2
Width Tolerance	W2	W2	W2	W2	W2	W2	W2
Thickness Tolerance	T2	T2	T2	T2	T2	T2	T2
Flatness Tolerance	P5	P5	P3	P3	P3	P3	P5
Squareness	S2	S2	S2	S2	S2	S2	S2
BRE Green Guide Rating	A+	A+	A+	A+	NA	A	A+

Please Note: 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

Morley Carr Rd, Low Moor, Bradford BD12 0RA

VAT Reg No.40876392 - Company Reg No.1800539