



Expanded Polystyrene

Technical Data Sheet

Sundolitt Expanded Polystyrene Insulation and Lightweight Fill is available in a wide range of compressive strengths and thermal performance to suit every application.

Our insulation range includes Climate high performance insulation board achieving lambda values as low as 0.030 W/mK.



EPS Benefits

-  **Excellent Insulation Properties**
-  **Lightweight and Easy to Install**
-  **Resistant to Freeze/Thaw**
-  **Flame Retardant Available**
-  **ODP = 0 GWP = <5**
-  **Rated A+ in BRE Green Guide**
-  **Fully Recyclable**

Environmental

Expanded Polystyrene (EPS) is one of the best insulation materials for environmental impact. Comprising 98% Air and only 2% Polystyrene very little fossil resources are required to produce EPS. Less than 0.1% total oil consumption is used in the production of EPS.

It has the best possible environmental ranking within the BRE Green Guide at A+.


EPS is inert and non-toxic. There are no chemicals or gases harmful to the environment emitted from EPS either during manufacture or within use.

Sundolitt Expanded Polystyrene - Physical Properties

PRODUCT GRADE	S70	S100	S150	S200	S250	S300	S350	S400	S500	CE70	CE100
Thermal Conductivity (W/mK)	0.038	0.036	0.035	0.034	0.034	0.033	0.033	0.033	0.033	0.031	0.030
Compressive Strength at 1% nominal Compression (kPa)	20	45	70	90	100	120	140	160	190	20	45
Compressive Strength at 10% nominal Compression (kPa)	70	100	150	200	250	300	350	400	500	70	100
Long Term Load (kPa) (Compressive Creep <2% over 50 yrs)	21	30	45	60	75	90	105	120	150	21	30
Bending Strength (kPa)	115	150	200	250	350	450	525	600	750	115	150
Shear Strength (kPa)	55	75	100	125	170	225	260	300	375	55	75
Water Vapour Resistivity (MNs/gm)	150	200	250	350	350	350	350	350	350	150	200
Water Vapour Diffusion Resistance Factor (μ)	20-40	30-70	30-70	40-100	40-100	40-100	40-100	40-100	40-100	20-40	30-70

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Lifecycle

EPS is inert and will last the lifetime of the construction into which it is installed.

There is no degradation in thermal properties and strength over time providing long term performance guaranteed.

EPS is fully recyclable. Clean waste and offcuts are ground down and placed into new insulation products. Other waste can be melted back to raw material state or used in energy recovery. Waste EPS is a valuable resource in energy recovery as it has a very high calorific value similar to natural gas.

Durable

EPS is resistant to the effects of freeze/thaw and can be used in temperatures ranging from -150°C up to +80°C.

It can safely be used within Cold Store construction and with Underfloor Heating and withstands the variations in temperature in external Civil Engineering applications.

EPS is extremely stable under normal operating temperatures. There is no requirement to allow for thermal expansion within the method of installation. Coefficient of linear expansion for EPS is $0.6 \times 10^{-6} \text{ }^\circ\text{C}$.



Non-Hazardous

There are no special requirements for PPE when handling or installing EPS. It is an inert, non-toxic material.

EPS does not represent an environmental hazard, it will not leach any damaging substances even when installed below ground water level.

Being 98% air EPS is a very lightweight material making it easy to handle without the need for mechanical assistance.

Compatibility

Expanded Polystyrene is compatible with all common construction products.

In civil engineering applications the lightweight polystyrene blocks should be covered with a membrane suitable to prevent contact between the EPS and hydrocarbons such as diesel.

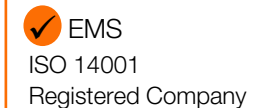
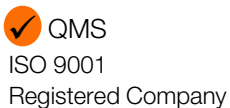
Underfloor heating pipes may be clipped directly onto the insulation. Other hot water pipes should be isolated from the insulation by 12mm as they may exceed the maximum working temperature of the insulation at 80°C.

PVC sheathed electric cables should not be allowed direct contact with the EPS. They may be placed over the VCL membrane or installed in PVC conduit. petrochemicals EPS) is one of the best insulation materials for environmental impact.



Accreditation

Sundolitt Expanded Polystyrene Insulation is manufactured in accordance with BS EN ISO 13163.



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