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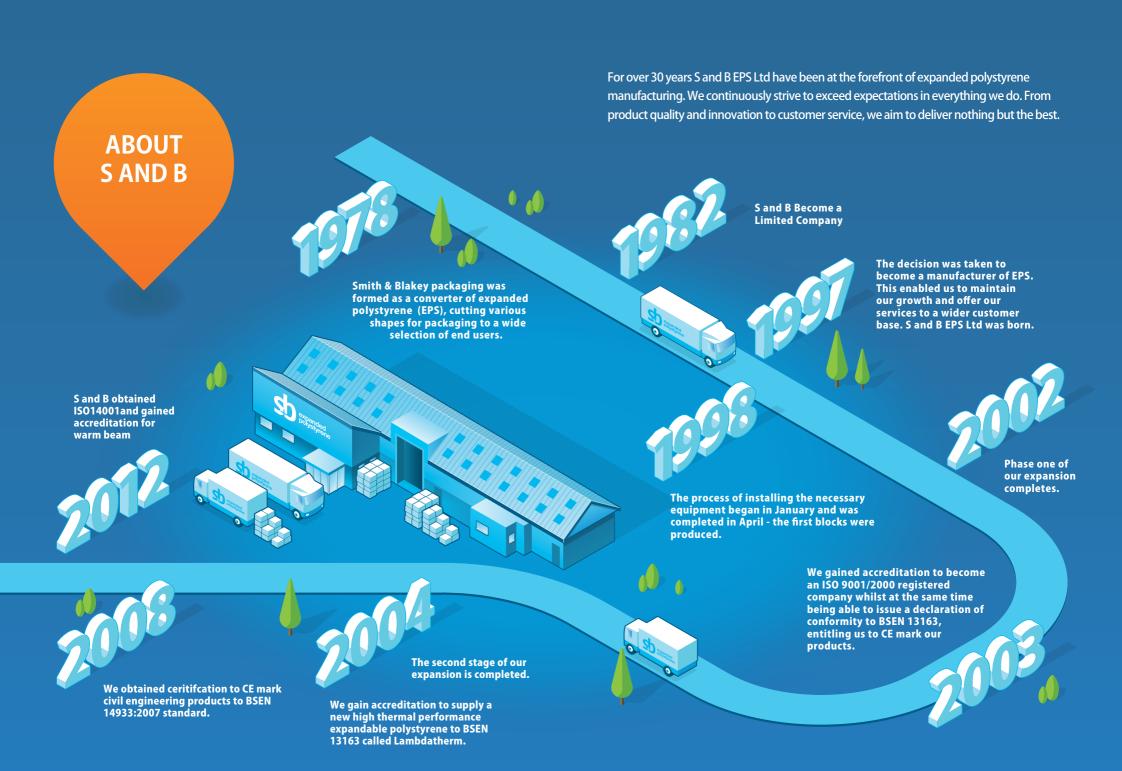






It is our policy to continuously strive for the highest standards in product quality and customer service. We aim to deliver insulation that exceeds expectation.

Green guide A+ rating





Expanded polystyrene is a rigid cellular plastic which is found in a multitude of shapes and applications, in particular as a highly effective insulation material.

EPS Manufacturing Process

Stage 1: Pre-expansion

The raw material is heated in specialised machines called pre-expanders with steam at a temperature of between approximately 80–100° C.

The density of the material falls from some 630 kg/m3 to values of between 10 and 35 kg/m3.

During this process of pre-expansion the raw materials compact beads turn into cellular plastic beads with small closed cells that hold air in their interior.

Stage 2: Intermediate maturing and stabilisation

On cooling, the recently expanded particles form a vacuum in their interior and this must be compensated for by air diffusion.

This is how the beads achieve greater mechanical elasticity and improve expansion capacity, something very useful in the following transformation stage.

This process is carried out during the materials intermediate maturing in aerated silos. The beads are dried at the same time.

Stage 3: Expansion and final moulding

During this stage the stabilised pre-expanded beads are transported to moulds where they are again subjected to steam so that the beads bind together.

In this way large blocks are obtained [that are later cut into required shapes like boards, panels, cylinders, etc] or products in their final finished shape.

What are the Benefits of EPS?

An effective and economical means of combatting high energy costs and emissions.

Safety in handling the product. Lightweight, non-toxic and inert.

Unique thermal properties.

EPS is 98% air therefore it is an excellent thermal insulator.

Moisture resistance due to its closed cell structure.

Excellent price/performance ratio.

Flexible mechanical properties

With its flexible production process, the mechanical properties of EPS can be adjusted to suit every specified application.

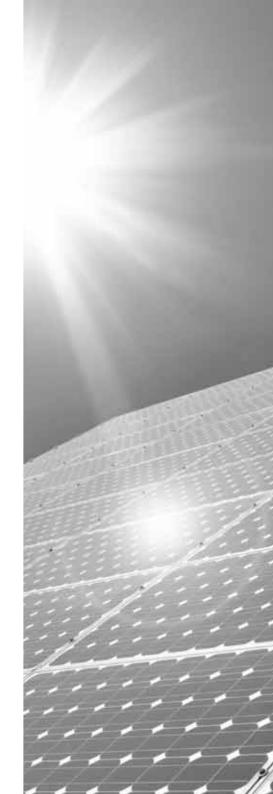
Lifetime durability

EPS does not decompose. It therefore provides lifetime application.

Versatile

EPS can be manufactured in almost any shape or size, and is compatible with a wide variety of materials.

Green guide A+ rating





2002 heralded many changes within the EPS industry, mainly relating to the construction sector as a result of Part L of the Building Regulations and the changing from the old BS 3837 standard to the new European BSEN 13163 standard.

One result of the above is the need for ever more stringent quality assurance testing in order to maintain the highest standards in the production process, involving the quality assurance department of S and B EPS undertaking daily testing that enables us to monitor the thermal performance, compressive strength and cross breaking properties of the polystyrene produced.

These tests are carried out in a dedicated laboratory with all the machinery calibrated and tested by the relevant accreditation bodies.

Each polystyrene block manufactured has its own quality assurance reference that follows it through the entire production process, finishing, with its identification being marked on the pack label prior to dispatch.

All S and B EPS construction products have been assessed by the BBA for fitness for intended use and copies of our accreditations can be obtained from S and B EPS or downloaded from our website www.sandbeps.com

Our Quality Standards

















Like our insulation, our delivery will exceed expectation.

S and B EPS believes that service to its customers is one of the main fundamentals in ensuring a good working relationship with our stockists and customers. To ensure this S and B EPS operates a dedicated transport fleet of vehicles offering flexibility of load sizes from small local deliveries to 90m3 loads nationally.

We pride ourselves on offering a next day delivery service for full trailer loads to any part of the UK mainland, either to your stock or direct to site, with a two day delivery for part loads.





Green guide A+ rating

The environmental impact of the materials that we use in every human activity is of growing concern and importance.

EPS is a light and rigid foam that is widely used in the worldwide building and construction industry, mainly as a thermal insulation.

EPS does not and has never contained either CFCs [chlorofluorocarbons] or HCFCs [hydrochlorofluorocarbons] gases, which diminish the ozone layer and in addition is fully recyclable and no waste is created in its manufacture.

EPS is an excellent example of an efficient use of natural resource, the transformation process uses very little energy.

The use of EPS for thermal insulation in the construction industry means significant energy savings on heating and cooling buildings and a dramatic reduction in the emission of polluting gases. It therefore contributes to alleviating the greenhouse effect and acid rain.

Manufacture and use of EPS does not generate any risk to health or the environment and life cycle analyses have shown that expanded polystyrene has far less of an impact on the environment than other competitive materials for the same use.

The waste EPS produced during manufacture is reground and recycled back into the manufacturing process. Any additional waste can be easily recycled or used in a variety of products.

S and B run to ISO14,001

Our Quality Standards





GWP [Global Warming Potential] and ODP [Ozone Depletion Potential]

EPS always scores well in relation to the protection of the Earth's ozone layer, as neither chlorofluorocarbons [CFCs] nor hydrochlorofluorocarbons [HCFCs] are used in its manufacture nor are these ozone depleting components emitted whilst EPS is in situ.

Therefore EPS passes an obvious first test of its suitability of a role in environmental protection and obtains a zero depletion rating and thus achieves a BREEAM credit.

The GWP figure is required under the Ecohome Assessment procedure for one area only and that is pollution that is part of the multi-step procedure. The others being energy, transport, materials, water, ecology, land use and health and well being.

GWP is weighed by the insulant gases and EPS scores less than 5 overall [over 100 years], therefore is not a high risk material and can be specified with confidence.

The Green Guide to Specification awards EPS an A+ rating that takes into account all the above criteria.

EPS and Recycling

EPS is one of the few materials that can truly claim to be 100% recyclable, it can be reused in the manufacture of new EPS products, soil improvements, auxiliary compost material, added to other building materials and by fusion and granulation turned into simple products such as coat hangers and pens.

Life cycle analyses have shown that expanded polystyrene has far less of an impact on the environment than other competitive materials for the same use.





Product Shape

The information contained in this data sheet is relevant to product supplied by S and B EPS Ltd in the form of block [ex-mould and trimmed) cut sheet or specific cut shapes / pieces derived from S and B EPS manufactured block.

Product Description

Products are self coloured, tending generally to a white appearance. EPS uses no greenhouse gas producing materials. It is chemically and environmentally non-aggressive and it can be - and is - easily recycled.

Applications

S and B EPS supply product which is most commonly used in building, civil engineering or packaging applications. The closed cell structure of the material offers excellent insulation properties in addition to mechanical strength. It is a first class cushioning material.

Product Specification

S and B EPS manufacture generally in accordance with BS EN 13163 and any product utilising an identifiable reference from that standard will meet or exceed the requirement of the standard.

There are numerous specific, additional grades which S and B EPS utilise to meet given customer / application requirements where a specific BS EN 13163 grade is inadequate. Any such product has unique references and (where appropriate) colour marking to ensure proper identification.

Product Marking

Block supplied ex-mould will bear unique identification details to permit specific traceability.

Cut sheet will bear coded edge striping to identify product grades and where such grades are specific to BS EN 13163 will comply with the requirement of that standard.

Cut shapes / pieces will not usually bear any codes or marking unless specifically requested at the time of order placement / acceptance.

Packaging

Ex-mould and trimmed block are usually supplied without packaging.

Cut sheet is generally made into suitable packs wrapped in transparent plastic sheeting. For certain applications and by agreement with the customer, cut sheet may be supplied unwrapped.

Cut shapes / pieces are supplied boxed or bagged depending upon quality and / or specific customer requirements.





Industrial Health / Toxicity

EPS is non-toxic and non-irritant therefore no specific precautions are necessary with respect to the handling of supplied products. Obviously ingestion should be avoided.

EPS is completely free of the presence of any heavy metals.

EPS does not suffer from mold or fungus attack. It offers no utility to vermin and is therefore no attraction to insects or rodents.

EPS is easily transported and handled due to the light nature of the material.

EPS products from S and B EPS LTD are available in a standard form or with an integral flame retardant (non fire retardant

material is reaction to fire class 'F', and fire retardant material is reaction to fire class 'E').

EPS is a combustible material and appropriate precautions must be taken at all stages to avoid ignition and to store product in a safe manner.

Further guidance relating to storage and fire hazards can be found on our coshh data sheet.

Environmental Issues

EPS fused products are chemically neutral.

They may be disposed of without any problems. EPS does not react with ground water nor produce any gases when dumped.

Due to its lightweight cellular structure it assists the aeration of sanitary landfills and burns completely in refuse incinerators.

The above information is given in good faith by S and B EPS Ltd and no liability is accepted. The responsibility for safe working and compliance with legislation or any local requirements rests with the purchaser and user.

Fire Hazard Information

Storage / Processing

EPS is combustible and all areas where the product is used or stored must be designated very strictly "no smoking" and free of other potential ignition hazards.

Users are recommended to seek guidance from their local fire authorities and / or health and safety inspectorate to ensure safe practice in relation to given site / factory circumstances.

As a generality, storage areas should ideally be; separate, rubbish free and accessible only to authorised persons. Stock piles should be sited such that, in the event of fire, flowing or dripping molten material will not cause the spread of fire to other combustible material or to other areas of a building, in particular staircases and corridors. Ensure clear aisles and do not impair the performance of sprinkler system.

Store the product well away from highly inflammable materials such as paint or similar materials.

Flame Retardancy

Fire retardant material contains a uniformly distributed flame retardant. Such flame retardant inhibits combustion from minor fire sources. However such material must not be considered non-flammable and proper precautions must be heeded.

Fire Fighting

Ensure adequate fire fighting equipment is to hand and that there are sufficient fire exits, which are kept clear at all times.

In the event of fire call the Fire Brigade, immediately advising them that EPS [expanded polystyrene] is involved. A small fire can be easily extinguished in the early stages if tackled quickly with a water, CO2, dry powder or BCF extinguisher provided that the person tackling a fire in its early stages takes no undue risk.

Smoke & Fumes

The gases emitted in the event of a fire do not differ essentially from the fumes given off when other organic materials burn. They consist predominantly of carbon dioxide and water. Other constituents, the concentrations of which depend on the conditions under which the fire occurs, are carbon monoxide and soot. Traces of hydrogen bromide are also given off during the combustion of flame retardant grade material.

In the event of a fire in which EPS is involved, there is generally no environmental hazard in the form of toxic fumes or water pollution. The fumes given off when EPS burns are those similar to those emitted by burning wood. Any traces of hydrogen bromide that may be dissolved in the water used for fire fighting and thus enter the drains can be regarded as negligibly small.

Please call for any coshh data or download from our website.



Insulation that exceeds expectation

Walls







External Wall Insulation

Structural Insulated Panels [SIPS]

Cavity Wall Partial Fill and Full Fill EPS Insulation

Cavity Wall Insulation Bead

Identification Table

Specification Data

Green guide A+ rating

Our Accreditations









External Wall Insulation

Expandable polystyrene boards are used as part of a render system to provide an efficient and cost effective solution.

S and B EPS external wall insulation is an accepted way of adding thermal value to the outer face of most external walls.

Its versatility enable it to be used with a variety of finishes including plastic weather boarding, cladding, tile hanging and reinforced render systems.

S and B external wall insulation when used on the external face of a masonry wall maximises the natural thermal capacity of the wall and assists in the reduction of thermal fluctuations.

Given that heating and air conditioning interior rooms consume vast amount of energy and also accounts for approximately 80% of total energy consumption, with 30% being lost through uninsulated walls, external wall insulation offers a high cost effective solution to reducing your carbon footprint and money expended on climate control.

S and B offer various bespoke grades for thermal wall insulation; grades such as S and B External wall, S and B Lambdatherm which is a grey, low thermal valued board, plus EPS 70E and EPS 200E all containing a fire retardant additive. Thermal values ranging from .038 to .030 W/mk. Selected grades of EPS raw material are used for external wall applications to reduce any bowing and shrinkage of the EPS.

S and B EPS external wall boards are available in square edge, tongue and grooved boards, rebated boards to fit onto a rail system and specialised bespoke boards including an EPS radius board.

Square Edge Boards

S and B EPS square edge board is available in standard sizes from 1200 x 600 to more commonly 1000 x 500mm with the thickness being from 20mm up to 300mm.

They are mechanically or adhesive fixed to external walls.

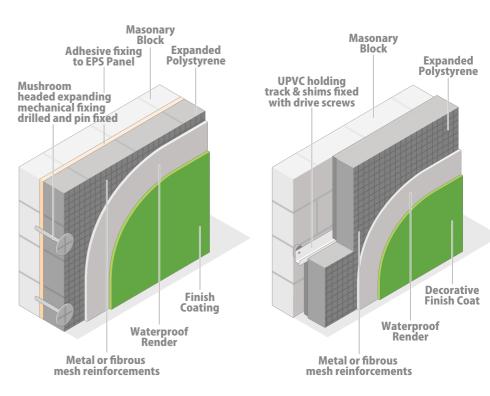
Rail System Boards

S and B Rail system boards come in standard dimension of 500 x 500mm ranging from 40mm up to 250mm in height. Boards are recessed and rebated on all four sides to fit a rail system that has been mechanically fixed on to an external wall.

Radius Board

S and B radius boards are bespoke cut boards suited to turn square edge buildings into radius arches and radius arches into square edge buildings.

Adhesive Fix



Mechanical Fix

Advantages

- Faster, more efficient single leaf construction can be used, creating additional internal space with improved thermal performance.
- Lightweight materials make this system suitable for tall constructions.
- S and B fill is both CFC [chlorofluorocarbons] and HCFC

[hydrochlorofluorocarbons] free with none of these ozone depleting components being emitted whilst it is the manufacturing process or in situ.

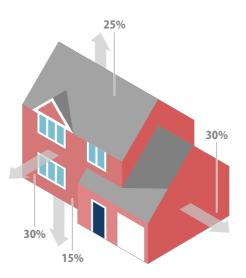
- Its closed-cell structure inhibits water absorption and it is unaffected by the normal range of climatic conditions.
- Unique thermal properties EPS is 98% air, therefore it is an excellent thermal insulator.



Why External Wall

Systems are proven to be the most efficient and effective solid wall insulation method.

Main area of heat loss on uninsulated house

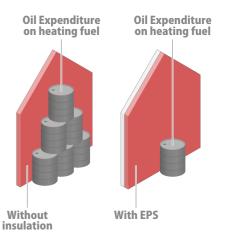


The benefits of EWI (External Wall Insulation) go beyond thermal performance, as it can also protect the fabric of your property. EWI systems offer a weather proof coating minimising the risk of weather damage to masonry and timber frames. They are also robust with impressive impact resistance.

EWI systems offer your home a fresh, attractive facade. Coupled with the increased energy efficiency, the development should also add significant value to your home.

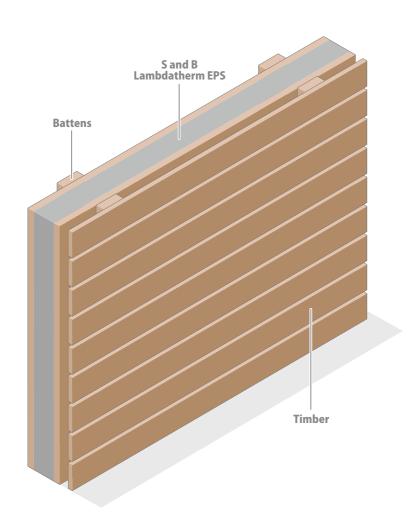
- Proven to be the most energy efficient solid wall insulation method.
- Protects the outer walls of your home from weathering and moisture penetration.
- Highly effective at dealing with condensation and cold spots.
- Available in a wide range of attractive finishes to improve the appearance of your home.
- Grant schemes are available for EWI developments.

Heating Fuel savings in houses and building using EPS Isulation



Structural Insulation Panels

The way we build houses is changing, with environmental concerns and issues likely to dominate all our lives for the foreseeable future.



As a result of this, the building industry is changing to adapt new technologies, resulting in the building of a brand new type of environmentally friendly, energy efficient zero carbon housing.

One method of construction that will be at the forefront of this building design and technology is SIPS panels.

We at S and B EPS embrace this technology and are pleased to be able to offer a CFC and HCFC free EPS core material giving the required flexibility to achieve any required U value.

Advantages

- S and B EPS SIPS core panels are manufactured from CFC and HCFC free polystyrene and are available in the following grades; EPS 70E, EPS 100E, EPS 150E, EPS 200E and Lambdatherm.
- S and B EPS SIPS core panels offer a wide range of sizes up to 5m in length and 1.2m in width and are able to accommodate any required thickness.



Cavity Wall Insulation Partial Fill and Full Fill

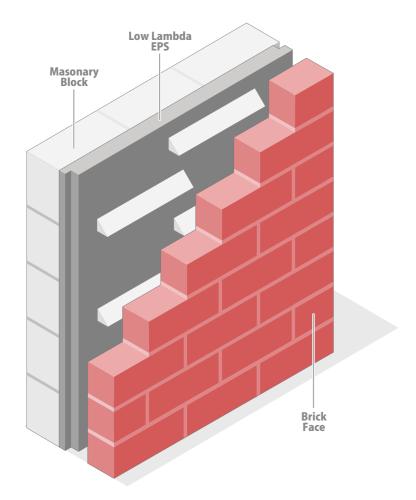
Designed for use in masonry walls, these choices are easily fixed to the leading leaf of the cavity normally with the use of wall ties.

Expandable polystyrene boards are supplied in a low thermal value material called Lambdatherm.

The board Dimensions are 1200 x 450mm with standard thicknesses of 75 and 100mm.

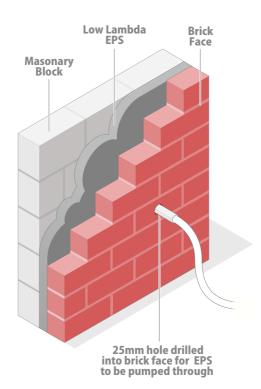
Key Advantages

- Simple to fix.
- Large boards allow for speedy installation.
- Low thermal value material.



Cavity Wall Insulation Bead

EPS is one of the best insulators on the market. Mechanically blown into external cavity voids, it can dramatically enhance the thermal performance of your home.



S and B EPS manufacture a range of expanded polystyrene beads for the cavity wall insulation market. It comes available in fire retardant grades such as low lambda grey bead and white.

Both of these choices are manufactured from polystyrene closed cell, inert, non toxic CFC and HCFC free material, and have a zero GWP (global warming potential) and ODP (ozone depletion potential).

S and B cavity wall bead is suitable for buildings 12m in height.

Key Advantages

- Reduced heat loss through the walls by up to two thirds.
- Reduced heating bills by up to one third.
- You get a warmer more comfortable home in winter and a cooler home in the summer.
- Application is fast and efficient.
- It's a cost effective solution.

S and B Walls

S and B Identification Table

New Identification / colou	ır coding of products manufactured to BSEN 13163	
EPS 70	2 x brown stripes	
EPS 70 E	2 x brown stripes & 1 red stripe	111
EPS 100	1 black stripe	1
EPS 100 E	1 black stripe & 1 red stripe	11
EPS 120	2 x green stripes	11
EPS 120 E	2 x green stripes & 1 red stripe	111
EPS 150	1 yellow stripe	I
EPS 150 E	1 yellow stripe & 1 red stripe	11
EPS 200	2 x black stripes	11
EPS 200 E	2 x black stripes & 1 red stripe	111
EPS 250	1 violet stripe	1
EPS 250 E	1 violet stripe & 1 red stripe	11
EPS 300	2 x violet stripes	11
EPS 300 E	2 x violet stripes & 1 red stripe	111

S and B Walls

S and B Specification Data

Property	Conditions	EDCOO	EPS250		Grades	EDC120	EDC100		ambdat 90	herm 70
		EP5300	EP3250	EP3200	EPS 150	EP3120	EP3100	EP3/0	90	70
Strength										
Compressive strength kPa Min	at 10% compressive strength	300	250	200	150	120	100	70	90	70
Cross breaking strength kPa Min		450	350	250	200	170	150	115	150	115
Safe working load kPa	at 1% nominal compression	120	100	90	70	45	45	21	45	21
Heat										
Thermal conductivity [k] value W/mk Max	10°C mean	0.033	0.033	0.034	0.035	0.036	0.036	0.038	0.030	0.032
Water (tabula	ted values)									
Vapour diffusion resistance factor µ1		40-100	40-100	40-100	30-70	30-70	30-70	20-40	30-70	20-40
Vapour permeability δ mg [pa.h.m]		0.007 to 0.018	0.007 to 0.018 to	0.007 o 0.018 to	0.010 o 0.024 to	0.010 0.024 to	0.010 o 0.024 to	0.018 0.036	0.010 to 0.024 t	0.018 o 0.036

To discover more about the benefits of S and B Wall Insulation, call today on **0191 250 0818**, or go to www.sandbeps.com



Insulation that exceeds expectation

Civil Engineering







S and B Fill

Road & Rail Embankments

Noise Bunds & Landscaping

Cylindrical Void Fillers

Specification Table

Green guide A+ rating

Our Accreditations











Sand B Fill

The development and use of expanded polystyrene [EPS] in civil engineering is evolving dramatically and is now seen as a viable alternative to traditional fill materials in the construction of road and rail embankments, abutments and backfill, that can cause unacceptable horizontal or vertical stresses in the underlying soil or against the structure.

Using S and B fill expanded polystyrene offers a reliable cost effective lightweight material solution to these problems thus reducing the probability of unacceptable lateral forces and further settlement coupled with the simplification of construction methods.

EPS has a proven track record as a fill material and has been used in the construction of embankments since the 1970s offering the benefits of removing the need to employ specialised foundations, long surcharge periods and reduce settlement problems after construction.

To meet these challenges S and B EPS Ltd manufacture lightweight structural void forming blocks and profile cut shapes, specifically designed for civil engineering applications that are available in a wide range of sizes and densities, with a high strength-to-weight ratio enabling them to withstand mechanical loads encountered.

Advantages

- S and B fill is a lightweight and easy to handle material with a high compressive strength and around a 1% weight ratio to traditional fill materials.
- Its closed-cell structure inhibits water absorption and it is unaffected by the normal range of climatic conditions.
- S and B fill is available in a wide range of densities offering bespoke solutions for individual projects
- S and B Fill is both CFC [chlorofluorocarbons] and HCFC [hydrochlorofluorocarbons] free with none of these ozone depleting components being emitted whilst it is the manufacturing process or in situ.
- S and B Fill is easily cut and can be shaped to the clients individual requirements using the latest CNC cutting technology.

Grades

S and B fill is manufactured in the grades shown in the specification data at the back of this guide and is normally supplied as F grade material, but can also be offered in E grade that contains a fire retardant additive, with both types conforming to BSEN 14933:2007.

Dimensions

S and B Fill standard blocks are 2440 x 1220 x 640mm [nominal size] with other sizes being available to alleviate the need for cutting on site [details on request].

Applications

S and B Fill is suitable for use assisting in areas of unstable ground, weak or compressible soil, areas adjacent to existing embankments, bridge construction and areas with difficult and restricted access.

HA & HB Loadings [BS 5400 Part 2]

The first standard for vehicle loads for roads and bridges was introduced in 1922 with further amendments in 1923 and 1937, with the introduction of HA loadings in 1945 and HB loadings in 1954 respectively, with the concept of notional lanes for the application of the HA and HB loadings being retained and expanded to cover up to six traffic lanes.

Full HA loading was to be applied to two notional lanes with one third HA applied to the rest.

The application of HB loadings changed slightly from the BS 153 requirements, in that the HB vehicle was no longer assumed to have sole occupancy of a lane, but HA loading could also be applied to the lane within 25m from the front of the HB vehicle and 25m behind the vehicle.

Calculations for HA and HB loadings as defined in BS 5400 Part 2 should be carried out to ensure that the correct grade of S and B fill is used in order that it complies within the design compressive strength of the material.

Installation

Details of the correct procedures in the laying, cutting, protection and capping layer of S and B fill are available and where appropriate, a design and drawing layout of an individual project will be supplied.

All civil engineering materials are supplied with a certificate of conformity to standard BSEN 14933:2007.















Road & Rail Embankments

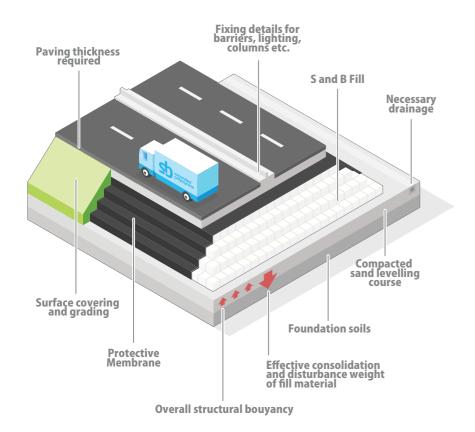
With its high strength-to-weight ratio and ability to withstand mechanical loads, S and B fill can assist in reducing the pressure on soils when taking into account the high unacceptable loadings that can be present, whilst offering a proven economical alternative to piled construction.

S and B fill offers a cost effective lightweight solution that takes away the problem of

unacceptable stresses encountered when using traditional fill materials and reduces the probability of settlement.

Traditional fill materials can be liable to unacceptable settlement when used on railway embankments.

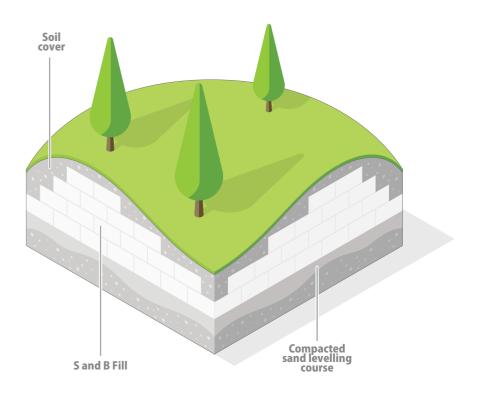
S and B Fill with its high strength-to-weight ratio offers a cost effective solution to loads encountered in railway construction.



Noise Bunds / Landscaping

S and B fill offers a fast cost effective method of building noise bunds to eliminate sound transfer by means of erecting a barrier between road traffic noise and housing, whilst offering the advantage of a 1% weight ratio to that of traditional materials.

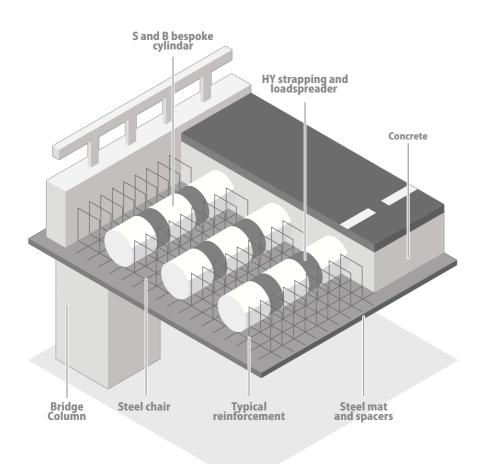
S and B fill when used in landscaping, with its high strength-to-weight ratio, can elevate the pressures on underlying structures and services in both soft and hard landscaping.



Cylindrical Void Fillers

S and B fill, with its versatility, can be cut into many bespoke shapes including cylinders that are a major feature of voided concrete structures such as elevated motorways and bridges.

It is widely used to produce sloping ramps in the construction of car parks, for flotation and barriers in marinas raised floors, sloping auditoriums, shuttering, pile locators, pile in-fills, curved or circular walls etc.



Lightweight Structural Voidformers

S and B Specification Data

S and B Grade	Fill 13	Fill 21	Fill 45	Fill 70	Fill 90	Fill 100	Fill 120
To BS EN 14933:2007							
Compressive strength at 1% compression [kPa]	10	21	45	70	90	100	120
Compressive strength at 10 % compression [kPa]	50	70	100	150	200	250	300
Cross breaking strength/ bending strength [kPa]	75	115	150	200	250	350	450
Sheer strength [kPa] in correlation to bending strength	35	55	75	100	125	170	225
Nominal density [kg/m³]	13	15	20	25	30	35	40
Other Physical properties							
Compressive Modulus [Mpa]	1.0	2.0	4.5	7.0	9.0	10.0	12.0
Compressive Modulus [kN/m³] at 1% compression	1,000	2,000	4,500	7,000	9,000	10,000	12,000
Thermal conductivity value [W/mk]	0.0430	0.038	0.0360	0.0350	0.0340	0.0330	0.0330
Max depth of concrete [mm]	415	830	1,875	2,915	3,750	4,165	5,000

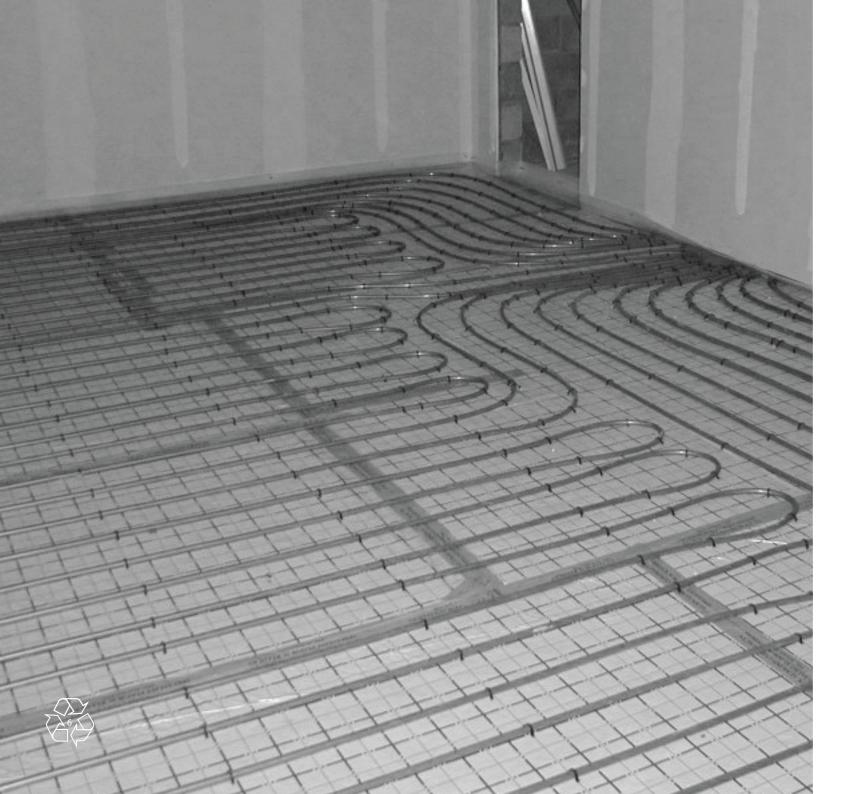
To discover more about the benefits of S and B Civil Engineering, call today on 0191 250 0818, or go to www.sandbeps.com.



Insulation that exceeds expectation

Underfloor Heating Systems







S and B Crios System Board
S and B EPS Contour Board
Identification Table
Specification Table
Green guide A+ rating

Our Accreditations







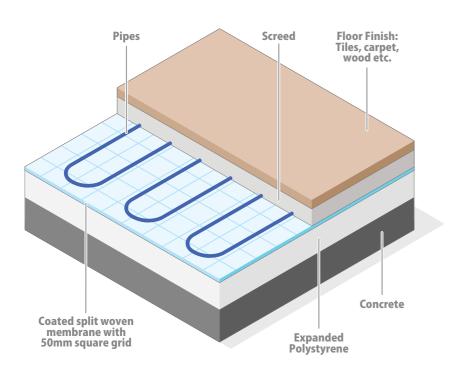


S and B Crios System Board

S and B EPS Crios system boards have been specially designed to assist in the laying of underfloor heating systems. It is a combination of an EPS board bonded to a coated split woven membrane that is blue in colour with a 50mm grid pattern to allow straight runs to be simply achieved and as with all other S and B EPS products is both CFC and HCFC free. S and B work

with design engineers and installers to make the complete package.

Standard sizes of S and B EPS Crios system boards are $2.4 \times 1.2 \text{m}$ with a 50mm film overhang on two of the sides allowing taping to form a continuous seamless surface with standard thickness being from 20mm to 200mm with other thicknesses available on request.

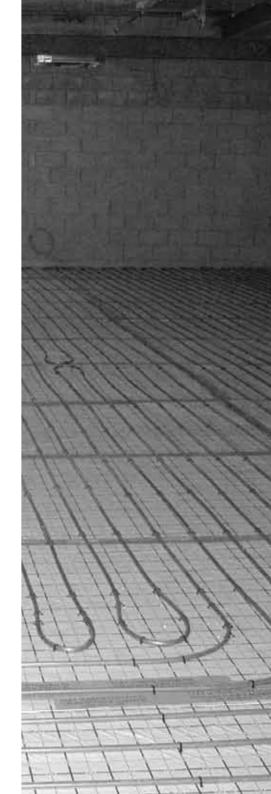


S and B EPS Crios system boards are available in the following grades: EPS 70, EPS 100, EPS 150, EPS 200, EPS 300 and Lambdatherm.

S and B EPS Crios system boards are compatible with most types of screed and readily accept all preparatory fixings ensuring that pipes remain in position until they are encased in the floor screed.

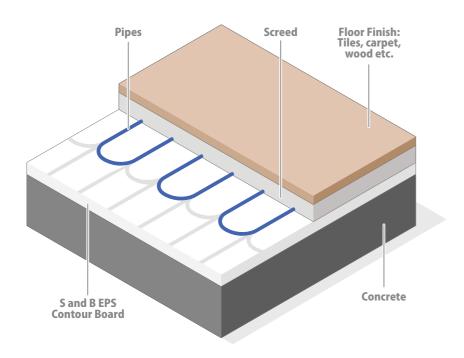
Advantages

- Gridwork provides an easy guide for installers allowing quick and accurate placing of pipe runs down to a minimum spacing of 50mm.
- Split woven membrane actively prevents pipe clips from pulling out of the material holding the pipework securely in place whilst screed is poured.
- The 50mm overlap allows for easy taping or the joints which prevents screed for entering joints between boards.
- Crios boards are quick and easy to install when compared to standard boards covered with a seperate membrane.
- The split woven membrane helps to protect the surface of the eps boards during installation.
- Crios Boards are available in a variety of thicknesses to allow most u values to be achieved.
- Excellent price to performance ratio.



S and B EPS Contour Board

S and B EPS Contour board is a two part hybrid system especially developed for the under floor heating market made from CFC & HCFC free polystyrene available in grades EPS 100, EPS 150, EPS 200, EPS 300 and Lambdatherm. Board 1: A universal 1200 x 1200mm board with straight grooved slots at either 200 or 300mm centres to suit 16, 20 & 22mm diameter pipes.



Board 2: A 800 x 300mm board with radius grooved return slots at 200mm centres to suit 16, 20 and 22mm diameter pipes.

Board 3: A 600 x 300mm board with a radius grooved return slots at 300mm centres to suit 16, 20 and 22mm diameter pipes.

The minimum thickness of S and B EPS Contour board is 30mm and thereafter can be increased in 5–10mm increments.

S and B Contour Boards are compatible with all other S and B EPS Flooring grade products that can be used to make up different floor zones as required.

S and B EPS Contour Boards are light to handle easy to install and can be cut to suit individual floor requirements.

S and B EPS Contour Boards can be supplied with factory bonded aluminium de-fuser plates

S and B EPS Contour Boards are manufactured in accordance to EN 13163 and CE marked as standard.



S and B Underfloor

S and B Identification Table

New Identification / colou	ır coding of products manufactured to BSEN 13163	
EPS 70	2 x brown stripes	
EPS 70 E	2 x brown stripes & 1 red stripe	111
EPS 100	1 black stripe	ı
EPS 100 E	1 black stripe & 1 red stripe	11
EPS 120	2 x green stripes	11
EPS 120 E	2 x green stripes & 1 red stripe	111
EPS 150	1 yellow stripe	I
EPS 150 E	1 yellow stripe & 1 red stripe	11
EPS 200	2 x black stripes	11
EPS 200 E	2 x black stripes & 1 red stripe	111
EPS 250	1 violet stripe	1
EPS 250 E	1 violet stripe & 1 red stripe	11
EPS 300	2 x violet stripes	11
EPS 300 E	2 x violet stripes & 1 red stripe	111

S and B Underfloor

S and B Specification Data

Property	Conditions				Grades			1.	ambdat	herm
Порелеу	Conditions	EPS300	EPS250			EPS120	EPS100		90	70
Strength										
Compressive strength kPa Min	at 10% compressive strength	300	250	200	150	120	100	70	90	70
Cross breaking strength kPa Min		450	350	250	200	170	150	115	150	115
Safe working load kPa	at 1% nominal compression	120	100	90	70	45	45	21	45	21
Heat										
Thermal conductivity [k] value W/mk Max	10°C mean	0.033	0.033	0.034	0.035	0.036	0.036	0.038	0.030	0.032
Water (tabula	ted values)									
Vapour diffusion resistance factor µ1		40-100	40-100	40-100	30-70	30-70	30-70	20-40	30-70	20-40
Vapour permeability δ mg [pa.h.m]		0.007 to 0.018 1	0.007 to 0.018 to	0.007 0.018 to	0.010 0.024 to	0.010 o 0.024 to	0.010 o 0.024 to	0.018 0.036	0.010 to 0.024 t	0.018 o 0.036

To discover more about the benefits of S and B Underfloor Heating Systems, call today on **0191 250 0818**, or go to www.sandbeps.com.



Insulation that exceeds expectation

Floors & Warm Beam







S and B Warm Beam Suspended Floor

S and B Lambdatherm

EPS 70 Flooring

EPS 100 Flooring

EPS 150/200/250/300 Flooring

Identification Table

Specification Data

Green guide A+ rating

Our Accreditations







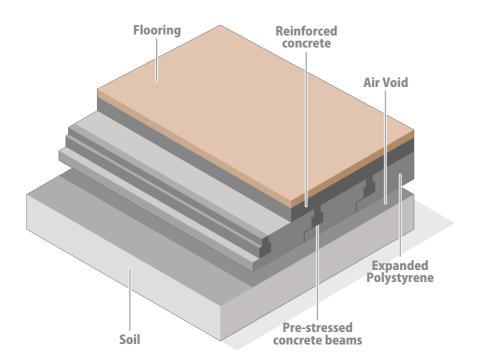




S and B Warm Beam Suspended Floor

We offer a wide range of bespoke rigid insulation modules manufactured from lightweight closed cell expanded polystyrene, which are laid between pre-stressed concrete beams finished with a self levelling concrete topping.

Given that EPS is rot, moisture and draft proof it eliminates the problems associated with part C of the building regulations relating to site preparation and resistance to contaminants and moisture.



S and B EPS suspended floor panels can be installed in conjunction with underfloor heating systems meeting the demand for more environmentally sound homes whilst reducing heating costs.

The use of S and B EPS suspended modules in conjunction with pre-stressed concrete beams are a highly effective, thermally efficient way of achieving and exceeding the thermal requirements of part L of the building regulations without the need for additional insulation.

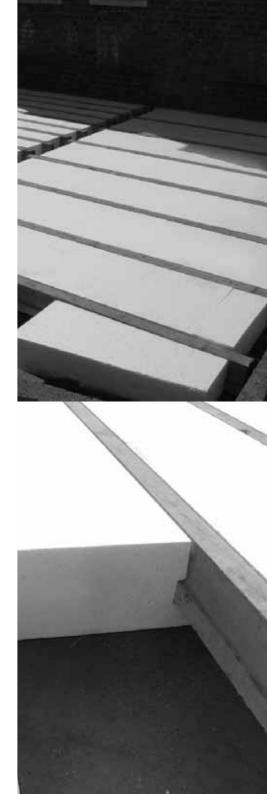
Grades

S and B EPS suspended floor modules are available in EPS 90, EPS 100, EPS 150 and Lambdatherm.

Advantages

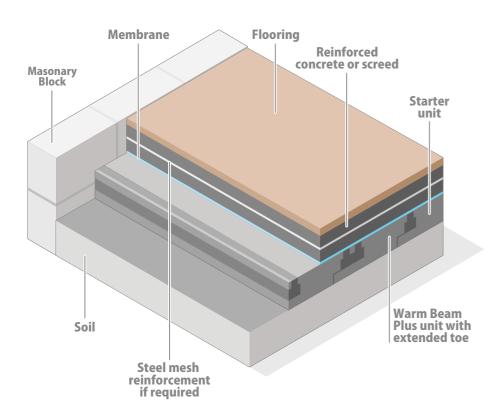
- Speed of laying application
- Thermal properties
- Interlocking panels to stop cold bridging
- Can be laid in wet conditions
- Excellent thermal properties
- Green guide A+ rating

Agrèment certificate can be downloaded from the BBA website

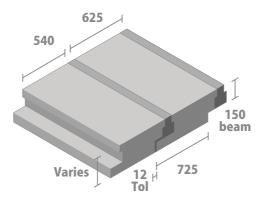


S and B Warm Beam / Warm Beam Plus

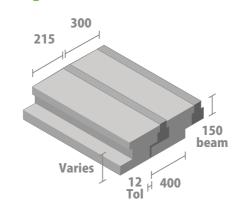
Typical installation layout



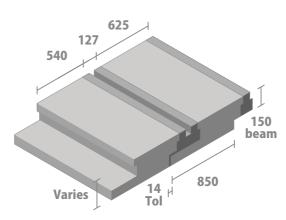
Single Max



Single Narrow



Double Max

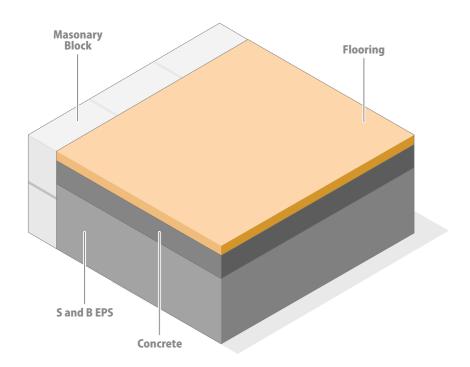




S and B Lambdatherm

S and B EPS Lambdatherm is a specially designed EPS that contains tiny chemically modified particles that reflect heat radiation and gives the material its grey colour.

These infrared absorbers and reflectors lower the thermal conductivity of the material offering a thickness reduction of about 20% against standard white EPS.





S and B Lambdatherm are designed for the insulation of ground floors in a variety of applications including domestic and commercial applications.

Features

- S and B EPS flooring offers excellent thermal performance providing savings in energy costs and higher comfort levels in dwellings.
- Maintains its thermal efficiency throughout the life of a building.

Compatibility

S and B EPS flooring is compatible with timber, cement, concrete, brick masonry and concrete beams. mortars it is compatible with bitumen based membranes but should not be used with membranes based on coal tar pitches. Plasticised PVC electrical cables can react with FPS when in direct contact. This reaction does not affect the performance of the EPS or the insulation properties of the cables. However it is recommended that PVC cables be run in conduit wherever possible.

S and B EPS Flooring has been assessed by the BBA, certificate number 02/3943 and copies of our accreditation can be

downloaded from our website. www.sandbeps.com or obtained direct from S and B FPS Limited.

Dimensions

Standard board sizes 2400 x 1200 thickness 25, 30, 40, 50, 60, 75, 80, 90 and 100mm with non-standard sizes supplied to order. Tongue and Grooved boards 1200 x 600 thickness 40, 50, 60, 75, 80, 90 and 100mm with non-standard sizes supplied to order.

Applications

Cavity wall Structural insulated panels [SIPS] External wall Ground floors Pre-stressed

Grades Supplied

- S and B Lambdatherm 90: 0.030 w/mk (thermal conductivity can be obtained)
- S and B Lambdatherm 70: 0.032 w/mk (thermal conductivity can be obtained)

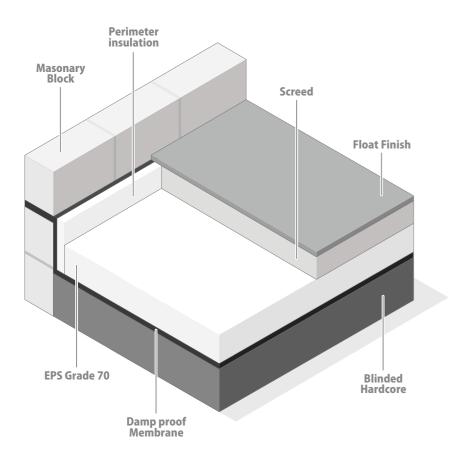
S and B EPS Flooring is manufactured from expanded polystyrene conforming to **BSEN 13163.**

EPS 70 Flooring

S and B EPS flooring boards are designed for the insulation of ground floors in a variety of applications. The product is a CFC and HCFC free, lightweight, closed cell material which is easy to install. It has a high insulation value and allows for rapid dry construction methods to be used in new and renovated dwellings and is available in either square edge or tongue and grooved profile.

Features

- S and B EPS flooring offers excellent thermal performance providing savings in energy costs and higher comfort levels in dwellings.
- Maintains its thermal efficiency throughout the life of a building.



- Highly cost effective floors.
- Rapid construction: no specialised equipment or trades required.
- Saves up to a week in building time when used in an all-dry system with flooring grade chipboard.
- Can be used under screeds, in heated floor slabs, below suspended slabs or between joists.
- Available in a variety of thicknesses.
- Non-toxic, non-irritant, moisture resistant, easy to cut and fix.
- Green guide A+ rating

Grade

S and B EPS 70 as standard for use under screeds to insulate all ground floors.

Dimensions

Standard board sizes 2400 x 1200 thickness 25, 40, 50, 60, 75, 80, 90 and 100mm with non-standard sizes supplied to order.

Tongue and grooved boards 1200×600 thickness 40, 50, 60, 75, 80, 90 and 100mm with non-standard sizes supplied to order.

Durability

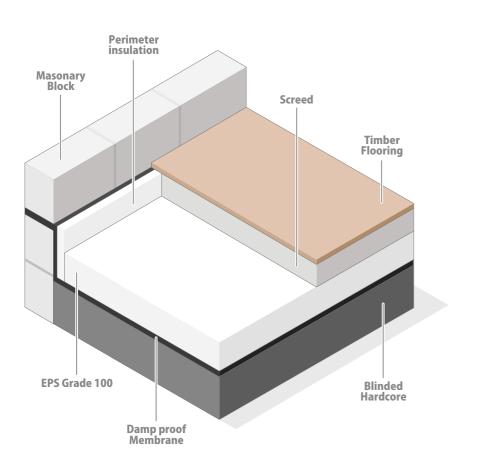
S and B EPS Flooring is moisture resistant and rot proof and is unaffected by bacteria, fungi or molds. It is non-toxic and odourless and provides no nutrients for insects or vermin.



EPS 100 Flooring

S and B EPS 100 flooring grade is recommended when high floor loadings are likely to be encountered in commercial applications and is suitable for use with either a solid or suspended ground floor and will meet the current building regulation U value requirements.

The product is CFC and HCFC free lightweight closed cell material which is easy to install. It has a high insulation value and allows for rapid dry construction methods to be used in new or renovated dwellings and is available in either square edge or tongue and grooved profile.



Features

- S and B EPS flooring offers excellent thermal performance providing savings in energy costs and higher comfort levels in buildings.
- Maintains its thermal efficiency throughout the life of a building.
- Highly cost effective floors.
- Rapid construction: no specialised equipment or trades required.
- Saves up to a week in building time when used in an all-dry system with flooring grade chipboard.
- Can be used under screeds, chipboard, in heated slabs and below suspended slabs.
- Available in a variety of thicknesses.
- Non-toxic, non-irritant, moisture resistant, easy to cut and fix.
- Green guide A+ rating

Grade

S and B EPS 100 as standard for use under chipboard and under screeds to insulate all commercial ground floors.

Dimensions

Standard board sizes 2400 x 1200 thickness 25, 40, 50, 60, 75, 80, 90 and 100mm with non-standard sizes supplied to order.

Tongue and grooved boards 1200 x 600 thickness 40, 50, 60, 75, 80, 90 and 100mm with non-standard sizes supplied to order.

Durability

S and B EPS flooring is moisture resistant and rot proof and is unaffected by bacteria, fungi or molds. It is non toxic and odorless and provides no nutrients for insects or vermin.

Compatibility

S and B EPS flooring is compatible with timber, cement, concrete, brick masonry and mortars. It is compatible with bitumen based membranes but should not be used with membranes based on coal tar pitches.

Plasticised PVC electrical cables can react with EPS when in direct contact. This reaction does not affect the performance of the EPS or the insulation properties of the cables. However it is recommended that PVC cables be run in conduit wherever possible.

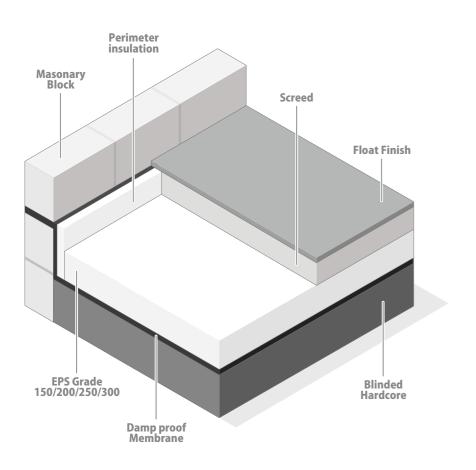
S and B EPS flooring is manufactured from expanded polystyrene conforming to BSEN 13163.

S and B EPS flooring has been assessed by the BBA, certificate number 02/3943 and copies of our accreditation can be downloaded from our website, www.sandbeps.com or from S and B EPS Limited.

EPS 150/200/250/300 Flooring

S and B EPS 100 flooring grade is recommended when high floor loadings are likely to be encountered in commercial applications and is suitable for use with either a solid or suspended ground floor and will meet the current building regulation U value requirements.

The product is CFC and HCFC free lightweight closed cell material which is easy to install. It has a high insulation value and allows for rapid dry construction methods to be used in new or renovated dwellings and is available in either square edge or tongue and grooved profile.



Features

- S and B EPS flooring offers excellent thermal performance providing savings in energy costs and higher comfort levels in buildings.
- Maintains its thermal efficiency throughout the life of a building.
- Highly cost effective floors.
- Rapid construction: no specialised equipment or trades required.
- Saves up to a week in building time when used in an all-dry system with flooring grade chipboard.
- Can be used under screeds, chipboard, in heated slabs and below suspended slabs.
- Available in a variety of thicknesses.
- Non-toxic, non-irritant, moisture resistant, easy to cut and fix.
- Green guide A+ rating

Grade

S and B EPS 150/200/250/300 as standard for use under chipboard and under screeds to insulate all commercial ground floors.

Dimensions

Standard board sizes 2400 x 1200 thickness 25, 40, 50, 60, 75, 80, 90 and 100mm with non-standard sizes supplied to order.

Tongue and grooved boards 1200 x 600 thickness 40, 50, 60, 75, 80, 90 and 100mm with non-standard sizes supplied to order.

Durability

S and B EPS flooring is moisture resistant and rot proof and is unaffected by bacteria, fungi or molds. It is non toxic and odourless and provides no nutrients for insects or vermin.

Compatibility

S and B EPS flooring is compatible with timber, cement, concrete, brick masonry and mortars. It is compatible with bitumen based membranes but should not be used with membranes based on coal tar pitches.

Plasticised PVC electrical cables can react with EPS when in direct contact. This reaction does not affect the performance of the EPS or the insulation properties of the cables. However it is recommended that PVC cables be run in conduit wherever possible.

S and B EPS flooring is manufactured from expanded polystyrene conforming to BSEN 13163.

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S and B Flooring

S and B Identification Table

New Identification / colou	ır coding of products manufactured to BSEN 13163	
EPS 70	2 x brown stripes	11
EPS 70 E	2 x brown stripes & 1 red stripe	111
EPS 100	1 black stripe	ı
EPS 100 E	1 black stripe & 1 red stripe	11
EPS 120	2 x green stripes	11
EPS 120 E	2 x green stripes & 1 red stripe	111
EPS 150	1 yellow stripe	I
EPS 150 E	1 yellow stripe & 1 red stripe	11
EPS 200	2 x black stripes	11
EPS 200 E	2 x black stripes & 1 red stripe	111
EPS 250	1 violet stripe	1
EPS 250 E	1 violet stripe & 1 red stripe	11
EPS 300	2 x violet stripes	11
EPS 300 E	2 x violet stripes & 1 red stripe	111

S and B Flooring

S and B Specification Data

Property	Conditions				Grades				ambdat	horm
riopcity	Containing	EPS300	EPS250			EPS120	EPS100		90	70
Strength										
Compressive strength kPa Min	at 10% compressive strength	300	250	200	150	120	100	70	90	70
Cross breaking strength kPa Min		450	350	250	200	170	150	115	150	115
Safe working load kPa	at 1% nominal compression	120	100	90	70	45	45	21	45	21
Heat										
Thermal conductivity [k] value W/mk Max	10°C mean	0.033	0.033	0.034	0.035	0.036	0.036	0.038	0.030	0.032
Water (tabula	ted values)									
Vapour diffusion resistance factor µ1		40-100	40-100	40-100	30-70	30-70	30-70	20-40	30-70	20-40
Vapour permeability δ mg [pa.h.m]		0.007 to 0.018	0.007 to 0.018 to	0.007 0.018 to	0.010 0.024 to	0.010 o 0.024 t	0.010 o 0.024 to	0.018 0.036	0.010 to 0.024 t	0.018 o 0.036

To discover more about the benefits of S and B EPS Flooring, call today on **0191 250 0818**. Or, go to www.sandbeps.com



Insulation that exceeds expectation

Roofs







S and B EPS Uniform Thickness & Cut-to-falls Roof Boards

S and B EPS Compressible Roof Panel

S and B EPS Warm Pitched Roof Panel

Structural Insulated Panels [SIPS]

Identification Table

Specification Data

Green guide A+ rating

Our Accreditations





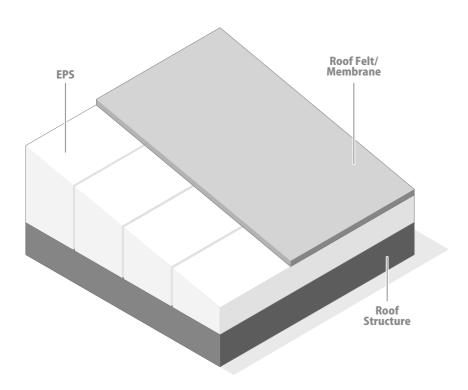




S and B Uniforn Thickness & Cut-to-falls Roof Boards

We manufacture a wide range of roofing insulation products to meet the various required applications.

We work in conjunction with roof engineers and design team (Building Innovation) to offer the complete design and supply package.



A main consideration for a specifier is to decide which weather proof finish is required and then build up a compatible system to accommodate this, coupled with the need to take into account the effect of heat on the construction both during construction and after completion.

Other important issues involve the selection of a compatible adhesive, sealant and or mechanical fixing to bond the weatherproof membrane plus the control of water vapour.

S and B EPS offer a wide range of systems that are available in a wide range of densities and thicknesses with, a square edge, shiplap or tongue and grooved edge detail.

Cut-to-falls insulation offers the ideal solution to refurbishment and ponding problems on existing buildings.

Uniform thickness boards are suitable for roofs which have an existing fall incorporated and are unaffected by bacteria,

fungi or molds and maintain their thermal efficiency throughout the life of the building.

Compatibility

S and B EPS roof insulation can be adapted to suit a wide range of applications including weatherproof roof membranes.

Unlaminated expanded roof boards are suitable for use under EPDM/ butyl rubber roofing and some plastic type single layer membranes.

Where the membrane is plasticised, a separating layer of fleece is required between the polystyrene and the membrane.

Pre-felted boards are suitable where built up felt or high performance roofing felts are used with mastic asphalt roofing, but care must be taken when laying in very high ambient temperatures (technical information available on request).

S and B profile roof boards

S and B EPS profile roof boards are designed to assist in the refurbishment of existing profiled roof finish by offering opportunity to change the appearance from that of a undulating profile to a uniform finish and offering greatly improved benefits to the thermal performance of the roof to current part L standards.

S and B profile boards can be manufactured to accommodate any one of the existing

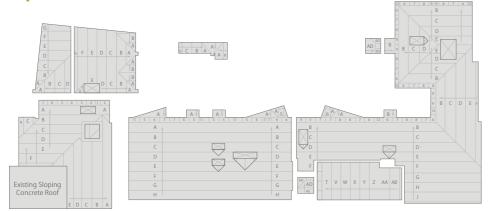
propriety brand profiles using the latest CNC control cutting technology.

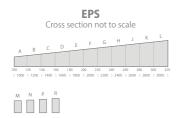
S and B roof panels are available with an unlaminated finish and also with 3b felt.

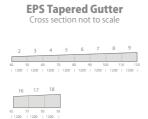
S and B Profiled boards are available in EPS 100E, EPS 150E, EPS 200E and Lambdatherm.

Boards sizes are to customer requirements and bespoke.

Tapered EPS Scheme











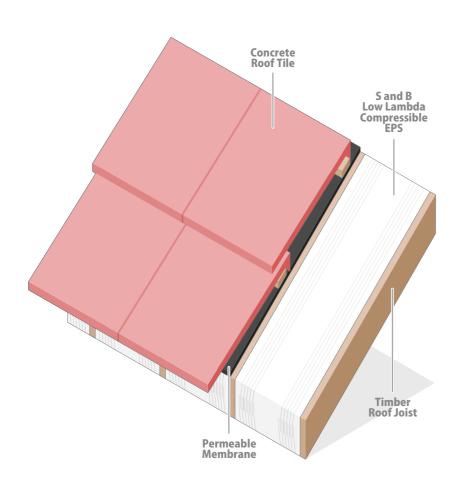
Flat Board Legend
1=40mm flat | 10=20mm flat | 11=70mm flat | 12=80mm flat | 13=140mm flat | 14=200mm flat | 15=65mm flat



S and B EPS Compressible Roof Panel

Our compressible roof panel works on the concertina principle and is effective for a wide range of applications including between rafter/trusses in sloping roofs, between joints for stud partitions, timber framed houses and as insulation under floors where basements are present.

S and B EPS compressible roof panels are installed with pressure being applied to the width of the panel that will always seek to return to its original dimension and therefore, as this is greater than the stated dimension, it is self retaining.



S and B EPS compressible roof panels can accommodate a wide range of rafter centres encountered with the minimum of fuss and greatly reduce the need for on-site cutting as experienced with conventional boards.

Dimensions

Length: 1200mm

Thickness: 90,100,125,150,175 and 200mm as standard with other thicknesses available by request.

Width: 375mm for 400mm nominal centres, 425mm for 450mm nominal centres and 575mm for 600mm nominal centres.

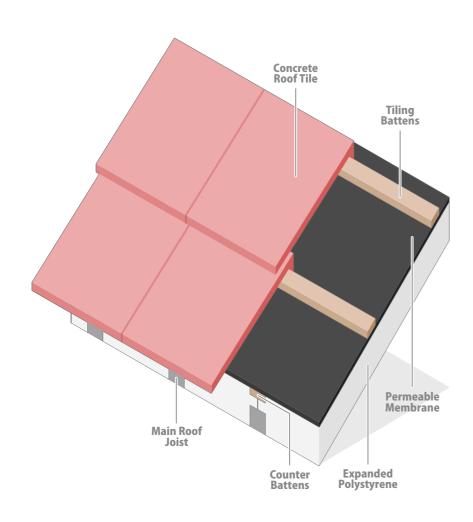
S and B compressible roof panels are manufactured with flame retardant additives and are CFC and HCFC free, Most common grade is Lambdatherm for use.



S and B EPS Warm Pitched Roof Panel

Our pitched roof panels are designed for use in warm pitched roof applications to provide a high level of insulation and are designed to insulate both the rafters as well as the roof and prevent the rafters forming a cold bridge.

When used in conjunction with a breathable membrane such as Roofshield or an equivalent it removes the need for ventilation of the roof void.



S and B EPS pitched roof panels are manufactured in various sizes to suit most rafter centres, thicknesses and edge profiles to suit nominal 38 or 50mm rafter centres plus, if required, an edge detail can be produced to accommodate double lapped rafters.

S and B EPS pitched roof panels are available in the following dimensions.

Length: 1200mm

Width: to suit 400,450 and 600mm rafter centres with standard thicknesses being 90 and 140mm other thicknesses are available on request.

All S and B EPS pitched roof panels are manufactured using fire retardant grades of EPS as standard, without the use of CFC and HCFC gases.

Common grades used are EPS 100E, EPS 150 E, EPS 200E and Lambdatherm our high thermal performance material.

S and B EPS pitched roof panels are designed to accommodate 400, 450 and 600mm rafter centres as standard.

When installing S and B EPS pitched roof panels the first run of panels should be installed from the ridge, ensuring that the

first panel matches the pitch of the roof, then continue the run to the eaves, ensuring that the rafter end again matches the required angle at the eaves.

This procedure should then be followed on each successive run until completion, ensuring that any gaps are filled with a suitable expanding foam sealant. Then a 38 x 50mm treated timber batten should be attached to the rafter tops at the eaves, abutting the last run of roof panels providing a stop end to retain the panel in position.

The panels are then secured by a 38 x 50mm wide treated counter batten positioned in the recess [as shown in the diagram, left] formed between two rows of panels.

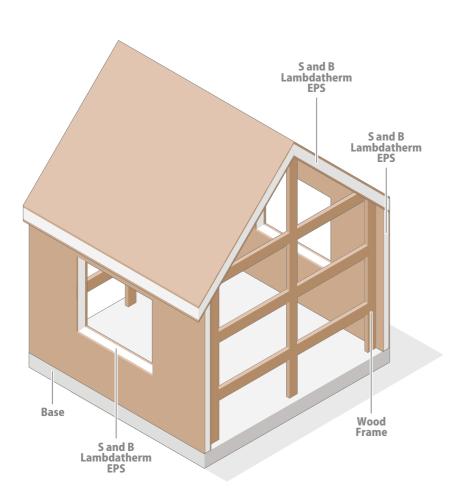
If required S and B EPS pitched roof panels are available to accommodate lapped rafters, matching the standard profile of our pitched roof panel boards.

A proprietary permeable sarking membrane should be installed over the counter battens in accordance with the manufacturers recommendations, with the tile battens then fixed to the counter battens using 65mm nails followed by the tiles with all work being carried out in accordance to BS 5534: Part 1.

S and B Structural Insulated Panels

The way we build houses is changing, with environmental concerns and issues likely to dominate all our lives for the foreseeable future.

As a result of this the building industry is changing to adapt new technologies resulting in the building of a brand new type of environmentally friendly energy efficient zero carbon housing.



One method of construction that will be at the forefront of this building design and technology is SIPS panels.

We at S and B EPS embrace this technology and are pleased to be able to offer a CFC and HCFC free EPS core material giving the required flexibility to achieve any required U value.

Advantages

S and B EPS SIPS core panels are manufactured from CFC and HCFC free polystyrene and are available in the following grades EPS 70E, EPS 100E, EPS 150E, EPS 200E and Lambdatherm.

S and B EPS SIPS core panels offer a wide range of sizes up to 5m in length and 1.2m in width that are able to accommodate any required thickness.



S and B Roofs

S and B Identification Table

New Identification / colou	r coding of products manufactured to BSEN 13163	
EPS 70	2 x brown stripes	
EPS 70 E	2 x brown stripes & 1 red stripe	111
EPS 100	1 black stripe	1
EPS 100 E	1 black stripe & 1 red stripe	11
EPS 120	2 x green stripes	11
EPS 120 E	2 x green stripes & 1 red stripe	III
EPS 150	1 yellow stripe	j
EPS 150 E	1 yellow stripe & 1 red stripe	11
EPS 200	2 x black stripes	11
EPS 200 E	2 x black stripes & 1 red stripe	111
EPS 250	1 violet stripe	ı
EPS 250 E	1 violet stripe & 1 red stripe	11
EPS 300	2 x violet stripes	11
EPS 300 E	2 x violet stripes & 1 red stripe	

S and B Roofs

S and B Specification Data

Property	Conditions				Grades			L	.ambdat	herm
		EPS300	EPS250	EPS200	EPS150	EPS120	EPS100	EPS70	90	70
Strength										
Compressive strength kPa Min	at 10% compressive strength	300	250	200	150	120	100	70	90	70
Cross breaking strength kPa Min		450	350	250	200	170	150	115	150	115
Safe working load kPa	at 1% nominal compression	120	100	90	70	45	45	21	45	21
Heat										
Thermal conductivity [k] value W/mk Max	10°C mean	0.033	0.033	0.034	0.035	0.036	0.036	0.038	0.030	0.032
Water (tabula	ted values)									
Vapour diffusion resistance factor µ1		40-100	40-100	40-100	30-70	30-70	30-70	20-40	30-70	20-40
Vapour permeability δ mg [pa.h.m]		0.007 to 0.018 1	0.007 to 0.018 to	0.007 0.018 to	0.010 0.024 to	0.010 0.024 to	0.010 o 0.024 to	0.018 0.036	0.010 to 0.024 to	0.018 o 0.036

To discover more about the benefits of S and B Roofs, call today on **0191 250 0818**, or go to www.sandbeps.com.



Insulation that exceeds expectation

Specialist Laminated Panels







PVC Door Panels

Precut Door Panels

Caravan & Cold Store Buildings

Identification Table

Specification Data

Green guide A+ rating

Our Accreditations









PVC Door Panels

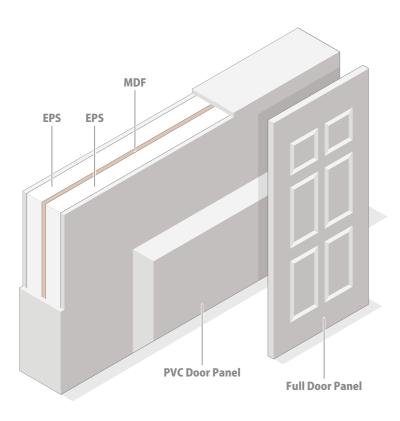
S and B offer precision cut panels with a standard tolerance of +/- 1mm to the laminating panel manufacturer.

Highly specialised cutting technology enables S and B to slice sheets from 5mm and above with a high quality finish coupled with high compressive strengths.

Bespoke grades for the door panel market can contain a fire retardant additive, for

example EPS 100E, EPS 120E, EPS 150E and EPS 200E an ultra high density material for specialist applications (see specification data table at the rear of this guide).

Sizes up to 5000mm in length and 1200 in width can manufactured and are both CFC [chlorofluorocarbons] and HCFC [hydrochlorofluorocarbons] free, with none of these ozone depleting components being emitted during the manufacturing process or in situ.



Precut Door Panels

Using the latest CNC operated machinery S and B offer a ready cut door panel supplied in all fire retardant materials.

This saves on waste EPS at the customers premises and time on the laminating line.

Highly specialised cutting technology enables S and B to slice sheets from 5mm and above with a high quality finish coupled with high compressive strengths.

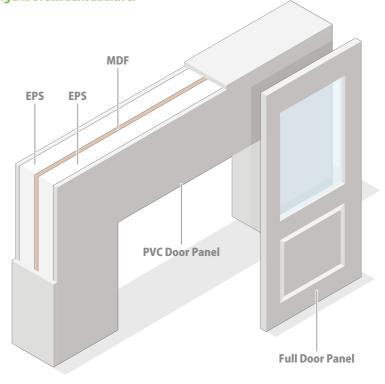
S and B EPS offer all grades of expandable polystyrene for this application with all containing a fire retardant additive.

Caravan & Cold Store Buildings

S and B offer EPS panels for use in the caravan industry, touring and static caravans are lined with expandable polystyrene.

S and B offer EPS panels for use in the cold store building market.

Using EPS make the panels lightweight with speed and ease of construction.



S and B Specialist Insulated Panels

S and B Identification Table

New Identification / colou	r coding of products manufactured to BSEN 13163	
EPS 70	2 x brown stripes	
EPS 70 E	2 x brown stripes & 1 red stripe	111
EPS 100	1 black stripe	1
EPS 100 E	1 black stripe & 1 red stripe	11
EPS 120	2 x green stripes	11
EPS 120 E	2 x green stripes & 1 red stripe	III
EPS 150	1 yellow stripe	j
EPS 150 E	1 yellow stripe & 1 red stripe	11
EPS 200	2 x black stripes	II
EPS 200 E	2 x black stripes & 1 red stripe	111
EPS 250	1 violet stripe	ı
EPS 250 E	1 violet stripe & 1 red stripe	11
EPS 300	2 x violet stripes	11
EPS 300 E	2 x violet stripes & 1 red stripe	

S and B Specialist Insulated Panels

S and B Specification Data

Property	Conditions				Grades			L	.ambdat	herm
		EPS300	EPS250	EPS200	EPS150	EPS120	EPS100	EPS70	90	70
Strength										
Compressive strength kPa Min	at 10% compressive strength	300	250	200	150	120	100	70	90	70
Cross breaking strength kPa Min		450	350	250	200	170	150	115	150	115
Safe working load kPa	at 1% nominal compression	120	100	90	70	45	45	21	45	21
Heat										
Thermal conductivity [k] value W/mk Max	10°C mean	0.033	0.033	0.034	0.035	0.036	0.036	0.038	0.030	0.032
Water (tabula	ted values)									
Vapour diffusion resistance factor µ1		40-100 4	10-100	40-100	30-70	30-70	30-70	20-40	30-70	20-40
Vapour permeability δ mg [pa.h.m]		0.007 to 0.018 t	0.007 to 0.018 to	0.007 o 0.018 to	0.010 o 0.024 to	0.010 o 0.024 to	0.010 o 0.024 to	0.018 0.036	0.010 to 0.024 t	0.018 o 0.036

To discover more about the benefits of S and B Laminated Panels, call today on **0191 250 0818**, or go to www.sandbeps.com.



Insulation that exceeds expectation

Conversion and Custom Shapes







Custom Shapes

Graphics and Advertising Products

General Conversion

Marina Buoyancy

S and B EPS Safe Fall Blocks

Green guide A+ rating

Our Accreditations



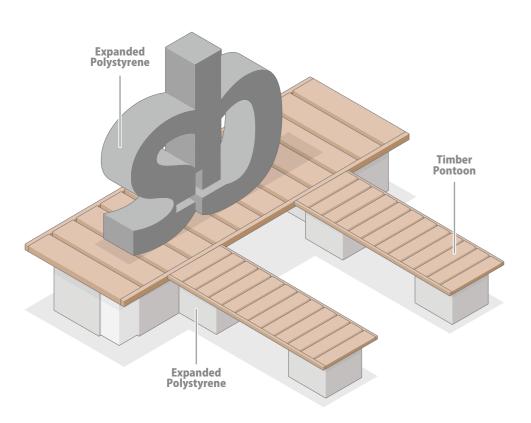


Custom Shapes

The versatility of expanded polystyrene and its water resistance lends itself to uses from a floating pontoon on a marina to a statue or column in a block buster movie.

Expanded polystyrene comes in all shapes and sizes with the latest CNC cutting technology any 2D shape can be made.

Blocks are formed with a fire retardant additive ready to be worked into 3D characters and objects for use in the Film studios and general public galleries.



Graphics and Advertising Products

Letters can be made up to 2400mm in height for advertising hoarding.

Blocks are formed with a fire retardant additive ready to be worked into 3D characters and objects for use in the Film studios and general public galleries.

General Conversion

S and B supply general expanded polystyrene for the conversion market which includes ex-mould blocks ready for the converter to slice and also cut pads to a variety of sizes and thicknesses.

Density ranges from 10 g/l up to 40 g/l Expandable polystyrene Lintel in fills are supplied by the use of CNC machines.

Expandable polystyrene beads are supplied for the bean bag market which come in 10 cubic feet bags

S and B EPS Safe Fall Blocks

S and B EPS safe fall blocks is a specially formulated light weight polystyrene designed to minimize the risks to site operatives when working on scaffolding or roof rafters.

S and B safe fall blocks should be laid on a continuous supporting layer closely butted together with care to ensure that any gaps are kept away from the perimeter and not bridged by full blocks.

The waste EPS produced during manufacture is reground and recycled back into the manufacturing process. Any additional waste can be easily recycled or used in a variety of products.

The use of S and B EPS safe fall enables contractors to meet the health and safety requirements that any body should be able to fall less than two metres.

S and B safe fall blocks are available as standard size $1200 \times 1200 \times 600$ mm with a delivery time of two to three days.





Do you need something else?

If you need something that isn't covered in this brochure, then get in touch with us and we'll do our upmost to supply it.

0191 250 0818

Our Accreditations



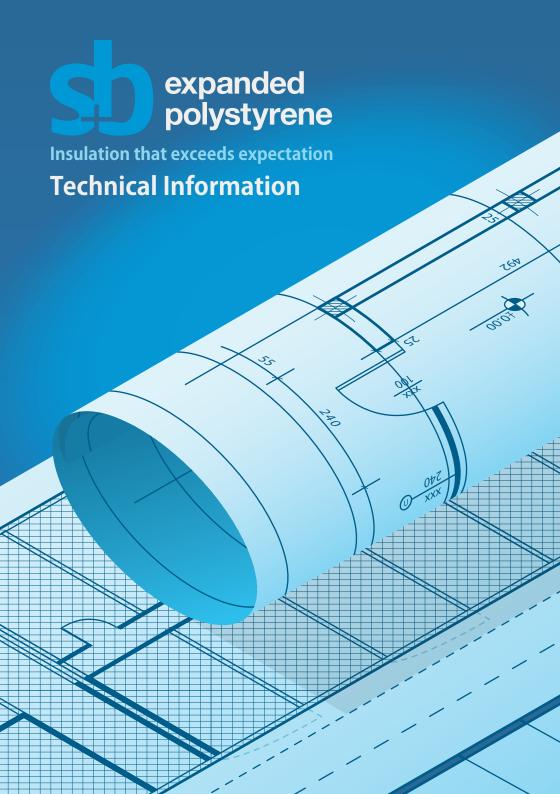
















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Glossary of Terms

Thermal Conductivity [k-values]: Units = W/mk

This is a measure of the rate at which heat is conducted through a particular material under specified conditions. In lists of these figures, a range of different values will be seen for similar materials due to the variations created by moisture levels and air levels within the material.

Thermal Resistivity [r-values]: Units = mK/W

This is merely the reciprocal of thermal conductivity and so may be calculated easily: r = 1/k.

An R-value will take into account the thickness of the material, thus allowing for more accurate comparisons between materials carrying out the same job. Steel, wood and concrete may all be used for the frame of the building, however each has a radically different thickness and R-value. To allow for a more accurate comparison in the insulation properties of each material, an R-value should be calculated.

Thermal Resistance [R-value]: Units = m2K/W

This is a measure of the opposition to heat transfer offered by a particular component in a building element. R-values are created by dividing the thickness of the material [metres] by the k-value for a particular material: R = d/k or R = dxr

Thermal resistance provides a specific result for a material of known thickness and can therefore allow for almost any material on sites' insulation properties to be examined.

Thermal Transmittance [U-values]: Units = W/m2K

This is a measure of the overall rate of heat transfer by all mechanisms under standard conditions through a particular section of construction. This measure takes into account the thickness of each material involved and is calculated from R-values of each material as well as constant accounting for surface transmittance [Rsi and Rso, inner and outer surfaces respectively] and also for a small standard value assigned, which in reality may vary slightly.

Thermal Bridging

This is the portion of a structure whose higher thermal conductivity lowers the overall thermal insulation of the structure. The bridge creates an area where heat loss is far greater in one area than it is for the general building structure thus creating a number of problems. These areas with poorer insulation will lower the average U-value for the building. This will also create cold spots on the walls inside the building where condensation will form more rapidly, resulting in damp patches and in the long term, possible rotting of the building structure.

Floor U-values

Calculating floor U-value is done using tables and involves the comparison between the perimeter and the floor area. The calculations are complex as they have to take into account both downward and lateral movement of heat.



Advantages of EPS Board

Thermal Insulation

EPS is a lightweight, closed cell material with excellent stable thermal insulation properties based on entrapped air.

Moisture Resistance

EPS is non-hygroscopic and therefore moisture resistant, and retains its thermal properties.

Compatibility

EPS is compatible with cement, concrete, brick, masonary, mortars, plaster and bitumen based damp proof membranes. It must not be used in contact with membranes based on coal tar pitches or other building material containing solvents.

Ease of Installation

EPS products are light in weight and easy to handle, store and install. No specialised equipment or specialised trades are required.

Environmental Safety

EPS is not affected by bacteria, mold or fungi and will not provide nutrient value for insects or vermin. It is non-toxic, non-irritant and odourless. It does not contain CFCs [chloroflurocarbons] which affect the ozone layer.

Durability

EPS is rot proof and durable and will remain effective as an insulant.

Physical Properties

Physical properties of each grade of EPS are shown in the specification data sheet at the back of this brochure. Test methods are as required by EN 13163.

Combustibility

The reaction to fire classification of EPS as supplied to the market is Euroclass F. Flame retardant modified boards will achieve Euroclass E. However the classification of construction works incorporating EPS [end use application] will be considerably better. For example when used in a masonry wall or protected by plasterboard, a Euroclass B can be expected.



Our Accreditations













Global Warming Potential & Climate Change

Background

Global Warming Potential (GWP) is a means of measuring the strength of different greenhouse gases in the atmosphere and can be used to define the impact greenhouse gases will have on global warming over different periods of time. As an example, carbon dioxide (CO2) has a GWP of 1 over 100 years. All other greenhouse gases (HFC, CH4) are measured relative to CO2; their global warming effect after 100 years relative to the simultaneous emission of the same mass of CO2.

BREEAM

BREEAM states that "one credit is awarded where the specification of insulating materials avoids the use of ozone depleting substances and substances with a global warming potential (GWP) of five or more in either manufacture or composition".

In this instances BREEAM is referring to the GWP of the blowing agent/s used within manufacture, "many blowing agents have significant global warming potentials".

BREEAM Pollution Credit 1-1: Insulant ODP and GWP

Expanded polystyrene normally uses pentane as the blowing agent. The release of pentane into the atmosphere causes neither ozone depletion or global warming, and pentane therefore has an Ozone Depletion Potential (ODP) of zero and a GWP less than 5.

The use of pentane blown expanded polystyrene therefore achieves this BREEAM credit.

Environmental Profiles

BRE's Environmental Profiles are a way of displaying the results of a Life Cycle Analysis (LCA). LCA's measure all the impacts associated with the manufacture of a product, including manufacture and transport of raw materials, use of fuels and production of wastes.

BRE Environmental Profile report the amount of climate change caused in the manufacture of one tonne of a product, or in the construction of a m2 of construction element. This will include the climate change or global warming caused by the release of any blowing agent with a GWP, as well as emissions of CO2 from the use of fuels. The climate change impact in Environmental Profiles are not the same as GWP of the product.

EPS Fire Characteristics

Characteristics of:	EPS E Grade Temperature [°C]	EPS F Grade Temperature [°C]		
Softening, shrinking, melting	from 100	from 100		
Ignition temperature with pilot flame	370	350		
Self ignition temperature	500	450		

Composition

Expanded polystyrene containing residual amounts of pentane (blowing agent) E grade material also contains a brominated flame retardant.

Component name	CAS No.	Hazard	Risk Phrase
Pentane	#109-66-0	#Highly Flammable	#11

CAS number for polymer component - 900/3-53-6 (polystyrene)

Toxicity of smoke fumes from EPS

Characteristics of:	Emitted fraction	ons (v/v) in ppm a	at different temp	eratures
EPS [standard grade]				
Smoke gases in a fire	300°C	400°C	500°C	600°C
Carbon monoxide	50*	200*	400*	1,000**
Monostyrene	200	300	500	50
Other aromatic compounds	fractions	10	30	10
Hydrogen bromide	0	0	0	0
EPS-SE [FR grade]				
Carbon monoxide	10*	50*	500*	1,000*
Monostyrene	50	100	500	50
Other aromatic compounds	fractions	20	20	10
Hydrogen bromide	10	15	13	11

End-use conditions. * Smouldering/glowing ** as a flame-not detected

Thermal Resistance for Flooring / Sheet

Grade	EPS 70	EPS 100	EPS 120	EPS 150	EPS 200 Lambdath	nerm 70	/ 90
Thermal value W/mK	0.038	0.036	0.036	0.035	0.034	0.032/	0.030
Thickness [mm]							
25	0.65	0.65	0.65	0.70	0.70	0.75	0.80
30	0.75	0.80	0.80	0.85	0.85	0.90	1.00
35	0.90	0.95	0.95	1.00	1.00	1.05	1.15
40	1.05	1.10	1.10	1.10	1.15	1.25	1.30
45	1.15	1.25	1.25	1.25	1.30	1.40	1.50
50	1.30	1.35	1.35	1.40	1.45	1.55	1.65
55	1.40	1.50	1.50	1.55	1.60	1.70	1.80
60	1.55	1.65	1.65	1.70	1.75	1.85	2.00
65	1.70	1.80	1.80	1.85	1.90	2.00	2.15
70	1.80	1.90	1.90	2.00	2.05	2.15	2.30
75	1.95	2.05	2.05	2.10	2.20	2.30	2.50
80	2.10	2.20	2.20	2.25	2.35	2.50	2.65
85	2.20	2.35	2.35	2.40	2.50	2.65	2.80
90	2.35	2.50	2.50	2.55	2.60	2.80	3.00
95	2.50	2.60	2.60	2.70	2.75	2.95	3.15
100	2.60	2.75	2.75	2.85	2.90	3.10	3.30
105	2.75	2.90	2.90	3.00	3.05	3.25	3.50
110	2.85	3.05	3.05	3.10	3.20	3.40	3.65
115	3.00	3.15	3.15	3.25	3.35	3.55	3.80
120	3.15	3.30	3.30	3.40	3.50	3.75	4.00
125	3.25	3.45	3.45	3.55	3.65	3.90	4.15
130	3.40	3.60	3.60	3.70	3.80	4.05	4.30
135	3.55	3.75	3.75	3.85	3.95	4.20	4.50
140	3.65	3.85	3.85	4.00	4.10	4.35	4.65
145	3.80	4.00	4.00	4.10	4.25	4.50	4.80
150	3.90	4.15	4.15	4.25	4.40	4.65	5.00
155	4.05	4.30	4.30	4.40	4.55	4.80	5.15
160	4.20	4.40	4.40	4.55	4.70	5.00	5.30
165	4.30	4.55	4.55	4.70	4.85	5.15	5.50

Flooring Pack Quantity & Meterage

Length [mm]	Width [mm]	Thickness [mm]	Qty per pack	Per pack [m³]	Per pack [m²]
2400	1200	20	15	0.8639	43.200
2400	1200	25	12	0.8639	34.560
2400	1200	30	10	0.8639	28.800
2400	1200	40	8	0.9215	23.040
2400	1200	50	6	0.8639	17.280
2400	1200	60	5	0.8639	14.400
2400	1200	70	4	0.8063	11.520
2400	1200	75	4	0.8639	11.520
2400	1200	80	4	0.9215	11.520
2400	1200	90	3	0.7775	8.640
2400	1200	95	3	0.8207	8.640
2400	1200	100	3	0.8639	8.640
2400	1200	105	3	0.9071	8.640
2400	1200	110	2	0.6335	5.760
2400	1200	120	2	0.6911	5.760
2400	1200	125	2	0.7199	5.760
2400	1200	140	2	0.8063	5.760
2400	1200	150	2	0.8639	5.760
2400	1200	200	2	1.1519	5.760
2400	1200	250	2	1.4398	5.760
2400	1200	300	2	1.7278	5.760

Indicative U-Values

Floor insulation below 65mm screed, 100mm slab. Soil: clay

EPS 70 @ 0.038 W/mK

P/A Ratio	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
U-Value										
0.25	25	30	60	75	85	90	95	100	105	105
0.22	25	50	80	95	105	110	115	120	125	125
0.18	25	85	115	130	140	150	155	160	160	165
0.15	40	120	150	170	180	190	195	195	200	205
0.10	140	230	265	285	295	305	310	315	315	320

EPS100 @ 0.036 W/mK

P/A Ratio	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
U-Value										
0.25	25	30	55	70	80	85	90	95	100	100
0.22	25	45	75	90	100	105	110	115	120	120
0.18	25	80	110	125	135	140	145	150	150	155
0.15	35	115	140	160	170	180	185	185	190	190
0.10	130	215	255	270	280	290	295	300	300	305

EPS150 @ 0.035 W/mK

P/A Ratio	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
U-Value										
0.25	25	30	55	70	80	85	90	95	95	100
0.22	25	45	75	85	95	105	110	110	115	115
0.18	25	75	105	120	130	135	140	145	150	150
0.15	35	110	140	155	165	175	180	180	185	185
0.10	125	210	245	265	275	280	285	290	290	295

Lambdatherm 90 @ 0.030 W/mK

P/A Ratio	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
U-Value										
0.25	25	25	50	60	65	75	75	80	85	85
0.22	25	40	65	75	85	90	95	95	100	100
0.18	25	65	90	105	110	120	120	125	125	130
0.15	30	95	120	135	145	150	155	155	160	160
0.10	110	180	210	225	235	240	245	250	250	255

Indicative U-Values

Floor insulation below ground supported 100mm concrete slab. Soil: clay

EPS 70 @ 0.038 W/mK

P/A Ratio	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
U-Value										
0.25	25	35	65	80	85	95	100	105	105	110
0.22	25	50	80	95	105	115	120	125	125	130
0.18	25	85	115	130	145	150	155	160	165	165
0.15	40	125	150	170	185	190	195	200	205	205
0.10	140	230	270	290	300	305	315	315	320	320

EPS100 @ 0.036 W/mK

P/A Ratio	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
U-Value										
0.25	25	30	60	75	80	90	95	100	100	105
0.22	25	50	80	90	100	110	115	115	120	125
0.18	25	80	110	125	135	145	150	150	155	155
0.15	40	115	145	165	175	180	185	190	195	195
0.10	135	220	255	275	285	290	295	300	305	305

EPS150 @ 0.035 W/mK

P/A Ratio	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
U-Value										
0.25	25	30	60	70	80	85	90	95	100	100
0.22	25	45	75	90	100	105	110	115	115	120
0.18	25	80	105	120	130	140	145	150	150	155
0.15	40	115	140	160	170	175	180	185	185	190
0.10	130	215	250	265	275	285	290	290	295	295

Lambdatherm 90 @ 0.030 W/mK

P/A Ratio	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
U-Value										
0.25	25	25	50	60	70	75	80	80	85	85
0.22	25	40	65	75	85	90	95	100	100	105
0.18	25	70	90	105	115	120	125	125	130	130
0.15	35	100	120	135	145	150	155	160	160	165
0.10	110	185	215	230	235	245	245	250	255	255

Indicative U-Values

Suspended floor T beam insulation. 158mm beam, 75mm concrete. Soil: unknown Warm Beam & Warm Beam Plus

Thickness using Warm Beam @ 0.036 /mK

P/A Ratio	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
U-Value										
0.20	183	183	183	188	193	198	198	198	203	203
0.18	183	183	198	203	208	213	218	218	218	223
0.15	183	213	228	238	243	248	253	253	253	258
0.13	203	248	263	273	278	283	283	288	288	288
0.11	248	293	308	318	323	328	328	333	333	333

Thickness using Warm Beam Plus @ 0.030 W/mK

P/A Ratio	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
U-Value										
0.20	183	183	183	183	183	183	183	188	188	188
0.18	183	183	183	188	193	198	198	198	203	203
0.15	183	198	208	218	223	223	228	228	228	233
0.13	188	223	238	243	248	253	253	253	258	258
0.11	223	258	273	278	283	288	288	293	293	293

Identification Table

New Identification / colou	r coding of products manufactured to BSEN 13163	
EPS 70	2 x brown stripes	11
EPS 70 E	2 x brown stripes & 1 red stripe	111
EPS 100	1 black stripe	1
EPS 100 E	1 black stripe & 1 red stripe	11
EPS 120	2 x green stripes	11
EPS 120 E	2 x green stripes & 1 red stripe	111
EPS 150	1 yellow stripe	1
EPS 150 E	1 yellow stripe & 1 red stripe	11
EPS 200	2 x black stripes	11
EPS 200 E	2 x black stripes & 1 red stripe	111
EPS 250	1 violet stripe	1
EPS 250 E	1 violet stripe & 1 red stripe	11
EPS 300	2 x violet stripes	11
EPS 300 E	2 x violet stripes & 1 red stripe	111

Specification Data

Specification Data

Property	Conditions			Grades			Lambda	
		EPS200	EPS150	EPS120	EPS100	EPS70	90	70
Strength								
Compressive strength kPa Min	at 10% compressive strength	200	150	120	100	70	90	70
Cross breaking strength kPa Min		250	200	170	150	115	150	115
Safe working load kPa	at 1% nominal compression	90	70	45	45	21	45	21
Heat								
Thermal conductivity [k] value W/mk Max	10°C mean	0.034	0.035	0.036	0.036	0.038	0.030	0.032
Water (tabulated va	lues)							
Vapour diffusion resistance factor µ1		40-100	30-70	30-70	30-70	20-40	30-70	20-40
Vapour permeability δ mg [pa.h.m]		0.007 to 0.018 to	0.010 0.024 to	0.010 0.024 to	0.010	0.018 to 0.036	0.010 to 0.024	0.018 to 0.036

Property	Conditions	EPS250	Grades EPS300	EPS350							
Strength	Strength										
Compressive strength kPa Min	at 10% compressive strength	250	300	350							
Cross breaking strength kPa Min		350	450	525							
Safe working load kPa	at 1% nominal compression	100	120	140							
Heat											
Thermal conductivity [k] value W/mk Max	10°C mean	0.033	0.033	0.0325							
Water (tabulated va	alues)										
Vapour diffusion resistance factor µ1		40-100	40-100	40-100							
Vapour permeability δ mg [pa.h.m]		0.007 to 0.018	0.007 to 0.018	0.007 to 0.018							



At S and B EPS Ltd we take real pride in finding solutions to problems, so whatever your expanded polystyrene needs, you can call on us to deliver

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