Jablite High Performance (HP) EPS

Jablite HP low lambda EPS is a lightweight cellular plastic material suitable for a wide range of applications.

Technical Description

Composition
Jablite HP is manufactured from grey EPS bead. The material comprises of expanded beads of low lambda polystyrene prefoamed and fused together in a steamheated mould under pressure.

This produces a block of material, up to 7314mm long, which is then cut to size and/or shape. After cutting to size, the material may be faced or laminated with other materials to suit its application.

Alternatively, the beads may be moulded into a finished shaped section which requires no further processing.

Jablite HP is available as Reaction to Fire Class E, containing a flame-retardant additive.

Tolerances
In accordance with BS EN 13163 tolerances on the cut dimensions are defined as follows:

Length: ±3mm or ±0.6% whichever is greater (L3)
Width: ±3mm or ±0.6% whichever is greater (W3)
Thickness: ±2mm (T2)
Squareness: ±5mm per 1000mm (S5).
Alternative tolerances can be provided for specific applications.

Dimensional stability: ±0.5% under constant laboratory conditions (DS(N)5)Standards

Jablite HP is produced to the requirements of 'BS EN 13163 Thermal Insulation Products for Buildings – Factory Made Products of Expanded Polystyrene (EPS)' specification.

Jablite has been assessed and approved to 'BS EN ISO 9001 (2008) Quality Management System' requirements.

Properties and Performance

Mechanical properties
Jablite HP has a high strength to weight ratio.

Moisture Properties
Although Jablite HP has significant resistance to the passage of water vapour, it should not be regarded as a damp-proof membrane or vapour-control layer and will not provide a barrier against damp penetration.

A suitable damp-proof membrane or vapour-control layer will be required in most forms of construction – see individual product and application data.

Fire
Jablite HP can be supplied with Class E 'flame-retardant' additive material
Biological Properties
EPS will not sustain mould growth, and has no nutrient value to insects or vermin.

Thermal Properties
Coefficient of linear expansion: $0.6 \times 10^{-6}°C$
The material is sufficiently resilient and flexible that no allowance needs to be made for thermal expansion in the method of insulation.

Working temperature range
EPS can be used within the temperature range -150˚C to +80˚C.

Typical Properties of Jablite Premium

Jablite HP		
	70	100
Mechanical Properties		
Compressive strength @ 10% compression (kPa)	70	100
Compressive strength @ 1% nominal strain (kPa)	20	45
Bending strength (kPa)	115	150
Moisture Properties		
Water vapour diffusion resistance factor μ	20-40	30-70
Water vapour permeability δ mg/(Pa.h.m)	0.015-0.030	0.009-0.020
Vapour resistivity (MNs/gm)	145	200
Thermal Properties		
Thermal conductivity (W/mK, at 10°C)	0.032	0.032
Thermal resistivity (mK/W)	31.25	31.25

Compatibility with other materials

EPS is soluble in aromatic, halogenated solvents and ketones; it should be protected from contact with hydrocarbons and strong solvents using a suitable membrane.

EPS should not be permitted to come into contact with PVC-sheathed electrical cables since this will lead to migration of plasticiser from the PVC resulting in embrittlement of the cable sheath. Cables should be protected by the use of a physical barrier, for example by being enclosed in a conduit or by an air gap.

Health, Safety and Environment

EPS is non-toxic and biologically inert. It is not irritating to the eyes or skin and no medical treatment or action is required as a result of accidental ingestion.

No special precautions are required during handling or cutting when carried out in well ventilated areas.

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