Bitumen Waterproofing

Hot Melt Waterproofing

Product Data Sheet

HYTHERM HP EPS

Insulation for Inverted Roofs

Axter Hytherm HP EPS is a high performance, expanded polystyrene (EPS) insulation with low water absorption properties, for use above the waterproofing membrane on inverted untrafficked roofs and on balconies and terraced roofs with pedestrian access only.

It is suitable for zero fall roofs in both uniform and tapered board designs. Hytherm HP EPS is used in conjunction with the Axter water flow reducing layer and gravel ballast or paving protection.

Key benefits

- Available in thicknesses from 50mm to 240mm (in increments of 1mm)
- U-values as low as 0.10W/m^{2}K possible
- Suitable for use on zero falls
- Lightweight, easy to install; overlapping boards prevent uplift
- Long lasting dimensional stability
- Resistant to effects of freeze/thaw
- Non-toxic, 100% recyclable
- BRE Green Guide A+ rating
- GWP <5, ODP zero

Axter Ltd West Road, Ransomes Europark, Ipswich, Suffolk, IP3 9SX | 01473 724 056 | info@axterltd.co.uk | **www.axter.co.uk**

- Manufactured to BS EN 13163, ISO 14001 and ISO 9001
- BBA and ETAG 031 approved

Axter Water Flow Reducing Layer

The water flow reducing layer (WFRL) is a vapour permeable, high performance, spun-bonded polypropylene flexible membrane supplied as an integral part of the inverted roof insulation system to reduce the cooling effect and improve overall thermal performance. It provides zero water penetration flow rates as tested to Annex C of the ETAG for Inverted Insulation Kits.

Length (m)	Width (m)	Area per roll (m^2)	Water vapour resistance to BS EN ISO 12572 (MNs/g)
100	3	300*	0.011

* Not allowing for overlap (300mm)

The water flow reducing layer is loose laid over the insulation with 300mm overlaps. It is turned up at all roof penetrations and upstands to a height to ensure it finishes above the level of the ballast or paving.

HYTHERM HP EPS – Technical Information

Hytherm HP EPS inverted roof insulation is a technologically advanced lightweight cellular plastic material for inverted flat roof applications. It is an excellent insulating material providing consistent thermal performance over the usual temperature ranges present in buildings.

Composition

Hytherm HP EPS is manufactured from unique expanded polystyrene (EPS) technology with low water absorption properties. It comprises expanded beads of polystyrene pre-foamed and fused together in a steam heated mould under pressure.

Compatibility with other materials

Hytherm HP EPS is compatible with and can be laid directly onto bitumen based, hot melt, single ply (PVC*, TPO, EPDM) or liquid applied polyurethane waterproofing membranes. Contact with hydrocarbons and strong solvents must be avoided by use of a suitable membrane.

*It should not come into contact with PVC membranes as this can result in migration of plasticiser and embrittlement of the membrane. A separating layer of fibreglass fleece or non-woven polyester should be installed between the two materials.

Hytherm HP EPS Properties

Moisture Properties	HYTHERM HP EPS (Grade to BS EN 13163, EPS 200)
Dimensions	
Board size mm	1200 x 1200 with rebated edge; board coverage 1.44m^2
Board thickness mm (available in 1mm increments)	50mm to 240mm
Colour	Grey
Thermal Properties	
Thermal conductivity W/mK, at 10°C	0.031 (declared lambda value) 0.035 (design lambda value)
Thermal Movement	
Coefficient of linear expansion	0.6 x 10-6°C
Mechanical Properties	
Nominal density	30 kg/m^3
Design load at 10% nominal compression (kN/m^2)	200
Design loads for long term compressive creep; (kN/m^2)	60
Design load at 1% nominal compression (kN/m^2)	90
Bending strength (kN/m^2)	250
Moisture Properties	
Long term water absorption by immersion to BS EN 12087	$\leq$ 1%
Long term water absorption by diffusion to BS EN 12088	$\leq$ 1%
Working Temperature Range	
Can be used within a working temperature range of:	-150°C to + 80°C
Fire Performance	
Classification to BS EN 13501-1	Euroclass E

Sustainability

Properties	HYTHERM HP EPS (Grade to BS EN 13163, EPS 200)
EPS Rating: BRE Green Guide The BRE Green Guide to Specification (www.bre.co.uk/greenguide/) provides guidance on how to make the best environmental choices when selecting construction materials and components.	A+
Ozone Depletion Potential (ODP)	Zero
Global Warming Potential (GWP)	< 5
Hytherm HP EPS is manufactured in factories which are ISO14001 certified.	
Manufacturing process utilises steam; 'blowing agents' detrimental to the environment are never used in the production of this material.	
Hytherm HP EPS is 100% recyclable.	

Biological Properties

Hytherm HP EPS is non-biodegradable and will be expected, therefore, to last the lifetime of the building into which it is incorporated.

It is non-toxic and inert and can safely be used in areas of planting. There is no occurrence of leachate with EPS. EPS will not sustain mould growth and offers no nutrient value to insects or vermin.

The manufacturer reserves the right without prior notice to modify the composition of these products. Characteristics provided in this publication derive from data obtained under controlled test conditions. Axter Ltd makes no warranties, express or implied, as to the properties and performance under any variations from such conditions in actual construction.