

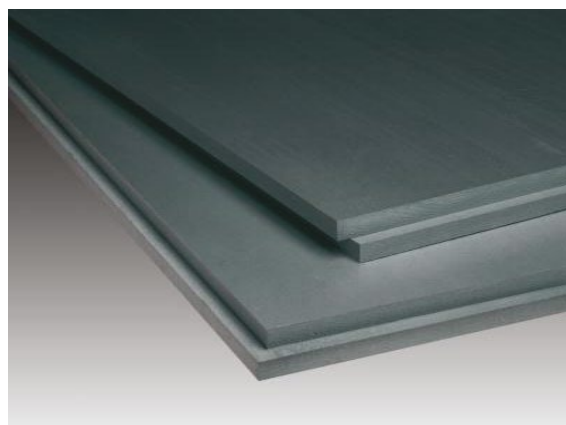
Product Data Sheet

HYTHERM ULTRA XPS Insulation - Inverted

High performance insulation for inverted roof constructions

Axter Hytherm Ultra XPS is a high performance, flame retarded, extruded polystyrene XPS insulation board, for use on inverted flat roofs, green, brown and blue roofs and car parks.

The insulation boards are grey with a smooth skin on both surfaces and are used in conjunction with the Axter Water Flow Reducing Layer. Infra-red particles are finely dispersed and incorporated into the extruded cell walls. These lead to reduced heat transfer to keep a building warm in winter and cool in summer.



Key benefits

- Low thermal conductivity minimising board thickness needed to achieve a specific U-value and increasing design flexibility, including lower parapet heights.
- Design compressive strength is 130kN/m².
- Flame retarded, enhancing safety and protection on construction projects.
- Environmental credentials: GWP (Global Warming Potential) <5; ODP (Ozone Depletion Potential) zero.
- Simple installation with hand tools, odourless and dust-free.
- Manufactured in accordance with BS EN 13164, ISO 14001 and ISO 9001.
- BREEAM Green Guide Rating A+; Environmental Product Declaration EPD-EXI-20190112-IBE1-EN.
- BBA Approved.
- Rot resistant.
- Low water absorption.
- Exceptionally stable, retaining initial insulation performance and physical integrity in exposed conditions over the very long term.

Use

Hytherm Ultra XPS is designed for use as insulation on inverted roofs. Its low thermal conductivity minimises the board thickness required to achieve a specific U-value, allowing greater design flexibility with demanding project specifications.

Durability

When properly installed, Hytherm Ultra XPS boards have a service life similar to that of the building or structure.

Fire

Hytherm Ultra XPS contains a flame retardant additive to inhibit accidental ignition from a small fire source. However, it is combustible and if exposed to an intensive fire may burn rapidly. During shipment, storage, installation and use, therefore, Hytherm Ultra XPS should not be stored close to open flames or other ignition sources or come into contact with volatile organic compounds and chemicals such as solvents. During installation Hytherm Ultra XPS products should be protected from direct exposure to fire. Hytherm Ultra XPS achieves Euroclass E (reaction to fire); fire classification is based on small scale tests which may not reflect the reaction of the product in its end use state under actual fire conditions.

Handling and Storage

Hytherm Ultra XPS must be stored flat, off the ground on a clean, level surface, and under cover or protected with opaque polythene, to protect it from high winds and prolonged exposure to sunlight. Where possible, packs should be stored inside. If outside, the boards should be raised above ground level (to avoid contact with ground moisture). The product is light and easy to handle, and care should be exercised to avoid crushing the edges or corners. If damaged, the product should be discarded.

Water Flow Reducing Layer (WFRL)

The Axter Water Flow Reducing Layer is a high performance spun bonded polyethylene geotextile, which helps to minimise heat loss caused by rainwater cooling and consequently the thickness of insulation required.

$f_x=0.001$ drainage correction for the system incorporating the Axter WFRL.

Nominal characteristics	
Roll size	Length 100m Width 3m or Length 50m Width 1.5m
	300m ² 75m ²
Water vapour resistance (MN.s.g ⁻¹)	0.17
Head of water test	No penetration
Mass per unit area (g/m ²)	60
Lap joints unsealed	300mm

Hytherm Ultra XPS –Product Data

Standard Thicknesses & Characteristics

Thickness (mm)	λ design W/mk	R Wm ² K/W	U0.18 W/m ² 0.15K	Length (mm)	Width (mm)	Compressive strength (kPa)
175	0.028	6.45	0.26315	1250	600	300
145	0.028	5.35	0.18	1250	600	300
130	0.028	4.80	0.20	1250	600	300
105	0.028	3.85	0.25	1250	600	300

Hytherm Ultra XPS is supplied as a lap jointed board.

Standard Thicknesses & Pack/Bulk Sizes

Thickness (mm)	Length (mm)	Width (mm)	Boards / pack	Packs /Bulk*	Bulk unit m ²	m ² / pack
175	1250	600	2	56	84	1.50
145	1250	600	3	48	108	2.25
130	1250	600	3	56	126	2.25
105	1250	600	4	48		3.00

*HYTHERM ULTRA XPS is packed on bearers in 2400 x 2500 x 2600mm bulk packs as standard.

Hytherm Ultra XPS – Technical Data**Extruded polystyrene foam XPS (EM13164) – grey colour**

Property ¹	Measure unit	Value	Standard	EN code
Thermal Conductivity				
Declared thermal conductivity ¹ Design thermal conductivity Thickness: 70 – 175mm	W/mK	0.027	BS EN 13164	λ_D
Dimensions and tolerances				
Length	mm	1250	BS EN 822	-
Width	mm	600	BS EN 822	-
Thickness	mm	70-175	BS EN 823	T1
Mechanical Properties				
Compressive strength or compressive stress at 10% deformation (90 days)	kPa	300	BS EN 826	CS(10\Y)
Compressive creep (design load) max 2% deflection after 50 years ²	kPa	110	BS EN 1606	CC(2/1.5/50) σ_c
Hygrometric properties				
Long term water absorption by immersion (28 days)	Vol-%	≤0.7	BS EN 12087	WL(T)
Long term water absorption by diffusion dN ≥50mm to <80mm	Vol-%	≤2	BS EN 12088	WD(V)
Long term water absorption by diffusion dN ≥80mm	Vol-%	≤1	BS EN 12088	WD(V)
Water vapour diffusion resistance factor μ	-	150	EN ISO 10456	MU
Freeze/thaw after 300 cycles	Vol-%	≤1	BS EN 12091	FTCD
Dimensional stability under specified temperature and humidity conditions	%	≤5	BS EN 1604	DS(70,90)
Deformation under specified compressive load and temperature conditions	%	≤5	BS EN 1605	DLT(2)5

Property ¹	Measure unit	Value	Standard	EN code
Other properties				
Reaction to fire	-	E	BS EN 13501-1	Euroclass
Linear thermal expansion coefficient	mm/m.K	0.07	-	-
Maximum service temperature	°C	-50 / +75	-	-
Capillarity	-	0	-	-
Density (typical)	kg/m ³	32	BS EN 1602	-
Colour	-	Grey	-	-
Surface finish	--	Skin	-	-
Edge profile		Shiplap	-	-
EN designation code: T1-CS(10\Y)300-CC(2/1,5/50)110-DS(70,90)-DLT(2)5-WL(T)0.7-WD(V)1,2,³-FTCD1				

¹ The properties refer to thickness ranges mentioned in the table.

² Depends on thickness

Material to be stored inside in original packaging, away from direct sunlight or heat sources.

Axter Ltd reserves the right to modify and update this data at any time without prior notice. Only the latest version of this document is valid, available for download at www.axter.co.uk/downloads. Once downloaded, documents are uncontrolled. Users should always confirm they are referring to the latest version prior to use. Further assistance is available from Axter Ltd's Technical Support Team, email: technical@axterltd.co.uk, telephone: 01473 935008.

The intended use of this product should be verified with Axter Ltd prior to adoption to ensure its suitability and compliance with specifications, project requirements, industry regulations, legislation, good practice, installation techniques and all other relevant guidance. Axter Ltd accepts no liability for non-compliant use of this product.