

Product Data Sheet

HYTHERM EPS PROFILE INSULATION

High performance profile insulation for warm roofs

Hytherm EPS Profile is a durable, lightweight, rigid expanded polystyrene (EPS) profile roof insulation designed to match any profiled roof in new and refurbishment applications. It will improve the thermal performance of an existing profile roof and of the building.

Key benefits

- Durable, lightweight, easy to handle and install.
- Bespoke profiles available to suit any existing or new profile.
- Boards are supplied profile cut on one or both sides.
- Extends life and improves aesthetic appearance of an existing roof.
- Can be supplied with factory-bonded finishes.
- Long lasting dimensional stability.
- Manufactured to BS EN ISO 13163, 14001 and 9001
- A+ rated in the BRE Green Guide to Specification.
- Zero ODP and GWP <5.
- 100% recyclable.
- Flame retardant additive achieving Fire Class E.



Product information

Hytherm EPS (expanded polystyrene) Profile boards are supplied in 100 and 150 grade EPS as defined in BS EN 13163. EPS has an A+ rating in the BRE Green Guide. The BRE Green Guide to Specification (www.bre.co.uk/greenguide/) provides guidance on how to optimise environmental choices when selecting construction materials and components.

Hytherm EPS Profile boards can be supplied with factory-bonded finishes (SBS polymer-modified bitumen membrane or high performance underlay to BS 747); as flat topped with a laminate to provide a good surface for a new bitumen membrane, cold applied liquid or EPDM waterproofing; or as unfaced EPS boards for use with a profiled cladding overlay or fleece-backed single ply PVC membranes. The boards contain a flame-retardant additive giving a Fire Class E (Reaction to Fire) Classification to BS EN 13501-1: 2018.

Board are cut to fit the profiled shape they will be installed on and supplied in a thickness to meet construction or thermal requirements. They are lightweight and easy to install; there are no requirements for special PPE when installing or cutting the insulation.

Hytherm EPS Profile – technical characteristics

| Dimensions | Measure unit | Value | | |
|-----------------|--------------|--|--|--|
| Board size | mm | 2400 x 1200mm maximum | | |
| Board thickness | mm | 20 up to 600 in 5mm increments (single layer) | | |

| Properties | Profiled Board 70 | Profiled Board 100 | Profiled Board 150 | |
|---|-------------------|--------------------|--------------------|--|
| Thermal Conductivity (lambda) W/mk | | | | |
| The U-value is calculated on an average depth of the profiled board. The required U-value can be achieved by any given combination of existing cladding, insulation and weathering finish and must be assessed on a case by case basis. | 0.038 | 0.036 | 0.035 | |
| Design load at 1% nominal compression (kPa) | 20 | 45 | 70 | |
| Design load at 10% nominal compression (kPa) | 70 | 100 | 150 | |

| Properties | Profiled Board (unfaced) | Profiled Board with high performance bitumen membrane facing | Profiled Board with BS 8747 Type 3B felt facing |
|---|--------------------------|--|---|
| Reinforced bitumen membrane waterproofing | ✓ | ✓ | ✓ |
| Cold applied liquid waterproofing | ✓ | ✓ | ✓ |
| Single Ply - PVC | ✓ | | |
| Single Ply – TPO | ✓ | | |
| Single Ply – EPDM (Rubber) | | | ✓ |
| Metal, Cement or GRP Profiled Sheet over insulation | ✓ | | |

Compressive strength

Hytherm EPS Profile boards are available in grades 70, 100 and 150 to meet performance requirements, the load bearing capacity of existing roof decks should be checked prior to installation.

| | |
|-----------|---|
| Grade 70 | Used where the profiled insulation will not be under load, usually where a second profiled sheet is placed over the insulation and mechanically fixed to the existing deck. |
| Grade 100 | Over any roof subject to maintenance traffic only. |
| Grade 150 | Recommended as a minimum grade where there may be constant foot traffic. |

U-values

The U-value for a roof with Hytherm EPS Profile is based on the average thermal resistance of the insulation. The thermal resistance and overall thickness of insulation required will vary greatly depending on the depth and space of the contours cut into the Hytherm EPS Profile boards.

U-values will be calculated for each individual project based on the profile design required and advice on thickness to achieve the required U-value will be given.

Fire

The fire performance will be dependent on the roof deck and weatherproof finish. Hytherm EPS Profile board should only be used over cement based cladding or other non- combustible profiled decks.

Waterproofing / Weatherproofing

The choice of Hytherm EPS Profile depends largely on the waterproofing membrane / weatherproofing sheet to be used on the project. Hytherm EPS Profile boards are available as unfaced boards or boards faced with a range of laminates to provide a high performance insulation panel suitable for all applications. The table below shows standard waterproofing options available currently (please consult Axter for design assistance and information on Axter waterproofing systems available for each application option) and the corresponding Hytherm EPS Profile board available.

| Application | Hytherm EPS Profile selection |
|-----------------------------|---|
| Reinforced bitumen membrane | <p>Unfaced Used in conjunction with Axter self-adhesive underlayers, consult Axter for design and specification assistance.</p> <p>Faced with high performance bitumen membrane or BS 8747 Type 3B membrane Torch-on membranes may be applied to the surface of the Hytherm EPS profile boards which would be supplied with a single layer of high performance torch-on bitumen membrane factory bonded to the surface.</p> <p>Pour and roll applied high performance and BS 8747 Type 3B bitumen membranes: where the bitumen membrane is to be applied by bedding in hot bitumen, it is recommended that the Hytherm EPS Profile board with a high performance membrane bonded to the top surface is used. Hot bitumen must always be applied by mop to reduce the temperature.</p> |

| Application | Hytherm EPS Profile selection |
|-----------------------------------|--|
| Cold applied liquid waterproofing | <p>Unfaced Used in conjunction with Axter self-adhesive carrier membrane, consult Axter for design and specification assistance.</p> <p>Faced with high performance bitumen or BS 8747 Type 3B membrane Most liquid applied waterproofing membranes can be directly applied to the Hytherm EPS Profile boards with either an SBS modified high performance bitumen or BS 8747 Type 3B membrane factory bonded to the top surface.</p> <p>Please contact Axter Ltd for advice on the most appropriate laminate when using liquid applied waterproofing membranes.</p> |
| Single ply – PVC (fleece backed) | <p>Unfaced Fleece-backed single ply PVC waterproofing membranes can be installed directly onto unfaced Hytherm EPS Profile boards. PVC membrane adhesives used with the unfaced insulation must be solvent free (typically a polyurethane based spray). Mechanical fixings can also be used if suitable for fixing through the profiled deck below the insulation.</p> |
| Single ply – TPO | <p>Unfaced Where a TPO membrane is to be mechanically fixed or fully adhered with a solvent free adhesive, the unfaced Hytherm EPS Profile board can be used. Please consult Axter if a solvent-based adhesive is to be used with this type of membrane.</p> |
| Single ply – EPDM (rubber) | <p>Faced with BS 8747 Type 3B membrane Hytherm EPS Profile board with a BS 8747 Type 3B membrane is recommended for use below EPDM membranes. Available in all compressive strengths.</p> |
| Profiled cladding | <p>Unfaced Where a secondary or new profiled sheet is to overlay the Hytherm EPS Profile board there is no requirement for a facing on the EPS insulation board.</p> <p>The new profiled cladding should be mechanically fixed through the insulation to the existing deck below.</p> |

Installation

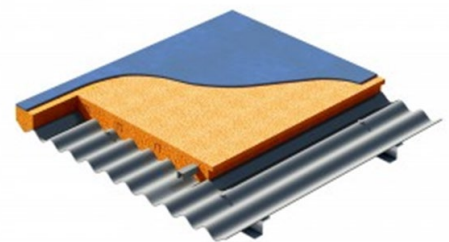
Hytherm EPS Profile Boards are positioned on top of existing profiled cladding sheet and covered by either a waterproofing membrane or new profiled cladding sheet.

Overlaying an existing profiled deck reduces the risk of condensation on the underside of the deck and prevents further deterioration of the deck through the process of weathering.

Deck

Existing decks must be brushed clean free of loose material and any organic growth or vegetation must be removed prior to installing the profiled insulation boards.

Any defects in the existing deck must be made good.



Air and Vapour Control Layer

A suitable air and vapour control layer (AVCL) should be installed over the deck when necessary to reduce condensation. The most effective AVCL over profiled decking is liquid applied.

Profile Insulation Boards

Existing profile roof decks often change shape over time and the profile of the roof may differ from the original design drawing. In order to ensure an effective fit for the insulation, sample boards will be cut to the original profile drawing and supplied to site for assessment of fit.

Once any necessary adjustments have been made to the profile shape the panels are supplied to site and fitted according to the requirements of the waterproofing/weathering to be placed over the boards.

Where the waterproofing is to be mechanically fixed the Hytherm EPS Profile boards may be temporarily adhered to the deck with a solvent free polyurethane adhesive.

Waterproofing / Weatherproofing

Where a proprietary waterproofing / weatherproofing system is to be installed the recommendations and instructions of the system supplier should be followed.

Environment and sustainability

| BREEAM Non-domestic Refurbishment 2015 | | | |
|---|--|-------------------------------|-------------------------------|
| Mat 01: Life Cycle Impacts | <p>Credits available: 2 – Industrial Buildings 5 – All other Building Types</p> <p>Points may be gained where at least 5 products specified at Design Stage are covered by a verified Environmental Product Declaration (EPD).</p> <p>EPDs produced by EUMEPS on behalf of a group of European EPS Manufacturers are available on the website below within the Construction section under Documents http://www.eumeps.org/</p> | | |
| Mat 03: Responsible Sourcing of Construction Products | <p>Credits available: 4</p> <p>BREEAM Summary Score – 2 for EMS (Certified) Key process and Supply Chain for EPS Insulation.</p> <p>Hytherm EPS Profile boards are manufactured using low energy processes in factories which are ISO 14001 and ISO 9001 certified. Raw material comes from suppliers who are ISO 14001 certified.</p> <p>Key Process (Insulation Manufacture) ISO 14001: Certificate Number EMS 559414</p> <p>Key Supply Chain Process (Main Polymer Production) ISO 14001: Certificate Number 80130-2010-AE-FRA-COFRAC Rev. 4</p> | | |
| Mat 04: Insulation | <p>Insulation products are covered within Mat: 01 and Mat: 03 (see above) included within the construction elements into which they are installed.</p> | | |
| BRE Green Guide Rating | Hytherm EPS Profile Board 70 | Hytherm EPS Profile Board 100 | Hytherm EPS Profile Board 150 |
| | A+ Element number 815320022 | A+ Element number 1315320023 | A+ Element number 1315320024 |
| Environmental | <p>OPD (Ozone Depletion Potential) = zero GWP (Global Warming Potential) <5 Hytherm EPS Profile boards are 100% recyclable</p> | | |

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