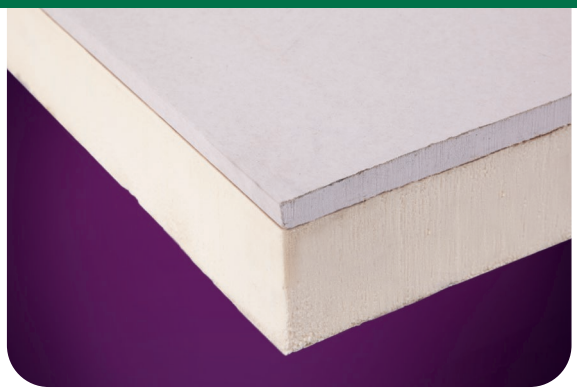
FOR WALLS

EcoTherm Insulation

Eco-Liner

2in1 • Eco-Liner • 2in1 • Eco-Liner •

Insulated plasterboard for mechanically fixed & adhesively bonded drylining



Fibre free rigid polyisocyanurate (PIR) insulation core faced with plasterboard

Eleventh Issue May 2024

Eco-Liner

Description

Eco-Liner comprises a fibre free polyisocyanurate (PIR) insulation core with a 12.5 mm plasterboard bonded to its inner face and a low emissivity composite foil facing on its reverse surface.

Applications

Eco-Liner is suitable for mechanically fixed or adhesively bonded insulated drylining applications. The insulated plasterboard is ideal for:

- walls
- pitched roofs/cold flat roofs
- room-in-the-roof applications
- both new build and renovations

Product properties

DIMENSIONS

Eco-Liner is available in the following standard sizes:

Width: 1200 mm
Length: 2400 mm
Thicknesses: 37.5 mm - 82.5 mm (insulation + plasterboard)
Weight: See Table 1 for board weights

STANDARDS AND APPROVALS

The plasterboard component of Eco-Liner complies with BS EN 13950: 2014 (Gypsum board thermal/acoustic insulation composite panels. Definitions, requirements and test methods).

EcoTherm PIR Insulation is produced at Kingspan Insulation's Pembridge (Herefordshire) manufacturing facilities and manufactured under a management system certified to ISO 9001: 2015 (Quality management systems), ISO 14001: 2015 (Environmental management systems), ISO 45001: 2018 (Occupational health and safety management systems), ISO 50001: 2018 (Energy management systems) and ISO 37301: 2021 (Compliance management systems).

All available certificates can be downloaded from **www.ecotherm.co.uk**

THERMAL PERFORMANCE

The insulation core component of Eco-Liner achieves a thermal conductivity (lambda/λ - value) of 0.022 W/mK.

The 12.5 mm gypsum plasterboard component of Eco-Liner achieves a thermal conductivity (lambda/λ - value) of 0.19 W/mK.

The thermal resistance (R-value) of Eco-Liner varies with thickness (see Table 1).

EcoTherm PIR insulation lambda and thermal resistance values stated in this datasheet are in accordance with BS EN 13165: 2012 + A2: 2016 (Thermal insulation products for buildings. Factory made rigid polyurethane foam (PU) products. Specification).

FIRE PERFORMANCE

There are potential restrictions placed upon this product which vary dependant on building type, height, construction and location in Great Britain. For guidance regarding the routes to compliance for meeting fire safety requirements please refer to the relevant Building Regulations / Standards for England, Wales and Scotland.

Eco-Liner achieves European Classification (Euroclass) B-s1,d0 when classified to BS EN 13501-1: 2018 (Fire classification of construction products and building elements. Classification using data from reaction to fire tests). For the test details and the extended field of application please see the below table:

Test report number	501291 / 501290
Classification report number	WF - 501663
Technical report EXAP (extended applications)	EXAP – WF - 501663
Product thickness (mm)	37.5mm – 82.5mm
Substrate	12.5mm Gyproc Type A Plasterboard
Mounting and fixing details	The composite was bonded to a plasterboard substrate (as defined in BS EN 13238:2010 (Reaction to fire tests for building products. Conditioning procedures and general rules for selection of substrates)) using dabs of gypsum based adhesive compound.
Joint Details	Vertical and horizontal joints. All joints between adjoining composites were fully filled with a jointing material.

Further details on the fire performance of Eco-Liner may be obtained from EcoTherm Technical Services: ecothermtechnical@kingspan.com.

DURABILITY

If correctly installed, Eco-Liner will remain effective for the life of the building. Its durability depends on the method of application, the supporting structure and conditions of use. It should not be used to isolate dampness or be used in continuously damp/humid conditions.

Fibre-free Core

RESISTANCE TO SOLVENTS, VERMIN & FUNGI
The insulation core of Eco-Liner resists attack from dilute alkalis and acids, mineral oil and petrol, however it is not resistant to ketonic solvents. Damaged boards should not be used. The fibre free insulation core and facings resist attack from mould and microbial growth and do not provide any food value for vermin.

WATER VAPOUR CONTROL
Eco-Liner has an integral vapour control layer to minimise the risk of interstitial condensation. If increased water vapour resistance is required, apply 2 coats of a proprietary sealer in drylined/taped/jointed systems.

Design considerations

ENVIRONMENTAL
An Environmental Product Declaration (EPD), certified to EN 15804: 2012 + A1: 2013 (Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products), has been created for Eco-Liner produced at Kingspan Insulation's Pembridge (Herefordshire) manufacturing facility. Please visit the Eco-Liner web page at **www.ecotherm.co.uk** for more information.

EcoTherm Insulation is manufactured under a management system certified to ISO 14001: 2015.

INTERNAL FINISHING
The front facing of Eco-Liner is a tapered edge gypsum based plasterboard which readily accepts dry-jointing materials and plaster skim in accordance with the specific manufacturer's guidance.

SPANNING
When fixed to timber framing, metal channels, rafters or battens, the maximum board span should be 600 mm.

TYPICAL U-VALUES
Eco-Liner achieves typical U-values as shown in Table 1.

Project specific U-value and Condensation Risk Analysis (CRA) calculations are available from EcoTherm Technical Services (see rear cover for details) on request.

For instant U-value calculations 24/7 visit EcoTherm's online U-value calculator at **www.ecotherm.co.uk**

Table 1 **Typical weights, thermal resistances & U-values for various thicknesses of Eco-Liner and different fixing methods**

Insulation thickness (mm)	Total thickness (mm)	Total weight per board (kg)	R-value (m^2K/W)*	Typical U-value - mechanically fixed to timber battens (W/m^2K)	Typical U-value - dot & dab application (W/m^2K)
25	37.5	27.0	1.10	0.57	0.56
30	42.5	27.4	1.35	0.51	0.50
40	52.5	28.3	1.80	0.42	0.40
50	62.5	29.2	2.25	0.36	0.34
60	72.5	30.1	2.70	0.32	0.30
70	82.5	31.0	3.15	0.28	0.26

Insulation thickness excludes 12.5 mm plasterboard.

Mechanically fixed calculations are based on a 215 mm thick solid dense blockwork wall with a 10 mm polymer render externally, Eco-Liner fixed to timber battens (25x50 mm at 600 mm Centres), and a 3 mm plaster skim coat internally.

Dot & dab calculations are based on a 215 mm thick solid dense blockwork wall with a 10 mm polymer render externally, Eco-Liner on 15 mm plaster dabs, and a 3 mm plaster skim coat internally.

*The thermal resistance value (R-value) is rounded down to the nearest 0.01.

The U-values quoted above are for the insulation and plasterboard component combined. These are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services (see rear cover for details).

FOR FREE TECHNICAL ADVICE
Call: 01268 591 155
Email: ecothermtechnical@kingspan.com

Sitework

HANDLING

- Do not drop boards
- Wear appropriate hand and eye protection
- To cut use a fine toothed saw
- Damaged boards should not be used

Cutting with power tools generates dust so should be kept to a minimum. Ideally all operations which produce dust should be carried out in well ventilated conditions; where possible a dust mask selected in accordance with BS EN 149: 2001 + A1: 2009 (Repiratory protective devices. Filtering half masks to protect against particles. Requirements, testing, marking) should be worn.

Ensure accurate trimming to achieve close butt joints and continuity of insulation.

For best practice installation, follow BS 8000-8: 2023 (Workmanship on construction sites - Design and installation of dry lining systems. Code of practice). If required for acoustics and air tightness, apply a suitable parge coat prior to lining.

HEALTH & SAFETY

Eco-Liner is chemically inert and safe to use. Product safety information is available to download from **www.ecotherm.co.uk**

STORAGE

Store boards in a flat, dry area off the ground away from mechanical and water damage and sources of ignition. If temporary outdoor storage cannot be avoided then the boards must be stacked clear of the ground and completely protected by use of an opaque polythene sheet or weatherproof tarpaulin. Boards that have been allowed to get wet should not be used.

Typical fixing instructions for dot & dab

WALL LINING

- When bonding Eco-Liner using proprietary PU (polyurethane) adhesive, please follow the PU adhesive manufacturers instructions.
- Apply a continuous perimeter ribbon of adhesive, 50 mm wide, around any openings i.e. windows, electric plug sockets on the external walls to provide a seal.
- Apply 3 vertical rows of gypsum plasterboard adhesive dabs to the wall at 300 mm vertical centres and a continuous bead at the bottom and top.
- Install board and ensure it is plumb, working to chalk lines on ceiling and floor by tamping the boards leaving a small gap of 10 mm at the base by use of a foot-lifting tool.
- After the gypsum plasterboard adhesive has set, fix appropriate nailable plugs (minimum of two per board) at mid-height and 25 mm minimum deep into the masonry as a secondary fixing.
- The maximum height of this system is 3 m high.
- An adhesive bonding method is for application to good plaster or fair-faced masonry walls where no irregularity exists. After surface preparation and setting out, flexible acrylic sealant adhesive is applied to either the substrate or the back of the insulation component of Eco-Liner at 300 mm centres horizontally and vertically. Boards are applied, starting from a window or door reveal.
- After the adhesive has set, a minimum of two nailable fixings should be applied at the mid-point of the board, approximately 25 mm from the board edge. Jointing and finishing are then carried out using conventional good practice.

Typical fixing instructions for mechanical fixing

This method may be used on any dry, stable constructions capable of supporting battens and associated fixings for timber frame applications and stand-off brackets, tracks and associated fixings for metal wall liner systems.

WALL LINING

- Fix pre-treated 50 mm wide x 25 mm deep timber battens at maximum 600 mm centres with horizontal battens at ceiling and just above floor level.
- Install Eco-Liner using drywall screws at 150 mm centres ensuring that they penetrate the timber 25 mm deep and not less than 10 mm from the edge.
- Screw heads should be driven just below the surface and care taken to ensure that they are not over driven.
- A proprietary metal lining system can also be used. Sitework guidance should be sought from the framing system manufacturer.

LINING PITCHED TIMBER RAFTERS

- Eco-Liner must always be installed with the long edge running across the joists or rafters, and all edges must be supported. Where joints between sheets of Eco-Liner are unsupported by the timber joists/rafters, timber noggins should be installed. must be used across the rafters.

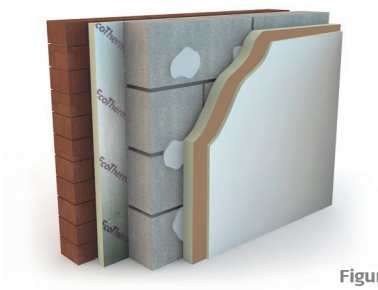


Figure 1 - Eco-Liner dot & dab application

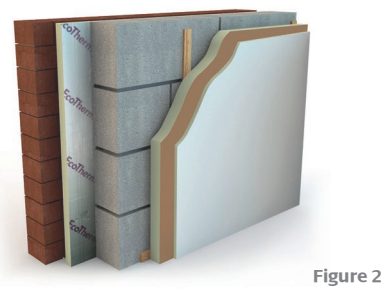


Figure 2 - Eco-Liner mechanically fixed application

EcoTherm Insulation

For the most up-to-date version of this brochure, please scan or click here.

To access pre-existing product information or information relating to previously sold/ discontinued products please email **literature@kingspaninsulation.co.uk.**

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