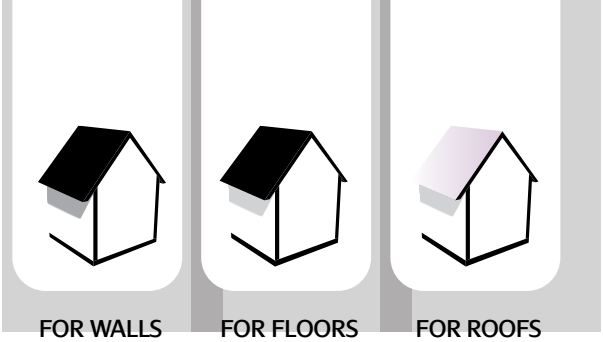


EcoTherm®
Insulation



Fibre free rigid polyisocyanurate (PIR) insulation core with aluminium foil composite facing to both sides







Fourteenth Issue February 2026

Description

Eco-Versal comprises a fibre free rigid polyisocyanurate (PIR) insulation core with aluminium foil composite facings on both sides.

Applications

Eco-Versal is suitable for use within new build and upgrading the thermal performance of existing building elements.

The board is suitable for use in:

- floors
- pitched roofs
- cold flat roofs
- timber frame walls
- solid walls
- dormer cheeks
- ceilings
- room-in-the-roof applications

Product properties

DIMENSIONS

Eco-Versal is available in the following standard sizes:

Width (mm): 1200
Length (mm): 2400
Thickness (mm): 25 - 150
Area: 2.88 m^2
Weight: See Table 1 for board weights

STANDARDS AND APPROVALS

The current manufactured range (in thicknesses of 25 - 150 mm), produced at Kingspan Insulation's Pembridge (Herefordshire) and Selby (North Yorkshire) manufacturing facilities, is covered by BBA Certificate No 24/7114.

EcoTherm PIR Insulation is 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

Eco-Versal has a thermal conductivity (lambda/λ-value) of 0.022 W/mK. The thermal resistance (R-value) of Eco-Versal varies with thickness (see Table 1).

The low emissivity surface of the reflective foil can help improve U-values in certain constructions when reflecting into a cavity.

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.

Under System 4 AVCP, Eco-Versal has a Euroclass rating of F.

Further details on the fire performance may be obtained from EcoTherm Technical Services (see rear cover for details).

COMPRESSIVE STRESS

The declared compressive stress of Eco-Versal is 120 kPa at 10% compression when tested to BS EN 826 (Thermal insulating products for building applications. Determination of compression behaviour).

DURABILITY

If correctly installed, Eco-Versal can have an indefinite life. Its durability depends on the supporting structure and the conditions of its use.

RESISTANCE TO SOLVENTS, FUNGI & RODENTS

The insulation core is resistant to short-term contact with petrol and with most dilute acids, alkalis and mineral oils. However, it is recommended that any spills be cleaned off fully before the boards are installed. Ensure that safe methods of cleaning are used, as recommended by the suppliers of the spilt liquid.
The insulation core is not resistant to some solvent-based adhesive systems, particularly those containing methyl ethyl ketone. Adhesives containing such solvents should not be used in association with this product.

Damaged boards or boards that have been in contact with harsh solvents or acids should not be used.

The insulation core and facings used in the manufacture of Eco-Versal resist attack by mould and microbial growth, and do not provide any food value to vermin.

Design considerations

RESPONSIBLE SOURCING
Eco-Versal produced at Kingspan Insulation's (Pembridge), Herefordshire and Selby, (North Yorkshire) manufacturing facilities is certified to BES 6001 (Framework Standard for the Responsible Sourcing of Construction Products) 'Good'.

BES 6001 Responsible Sourcing www.greenbooklive.com

To download all available certification please visit our website.

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

TYPICAL U-VALUES
Please see the following pages for typical U-values for each application.

In a floor application the U-value will be dependant on the (P/A) ratio. Eco-Versal achieves typical U-values as shown in the exposed perimeter/area tables throughout this datasheet.

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

The U-values quoted are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services (see rear cover for details). For instant U-value calculations 24/7 visit EcoTherm's online U-value calculator at **www.ecotherm.co.uk**

Table 1 **Typical weights and thermal resistances**

Thickness (mm)	Weight per board (kg)	Thermal Resistance / R-value (m^2K/W)
25	3.38	1.10
30	3.83	1.35
40	4.72	1.80
50	5.62	2.25
60	6.51	2.70
70	7.40	3.15
75	7.85	3.40
80	8.29	3.60
90	9.19	4.05
100	10.08	4.50
110	10.97	5.00
120	11.87	5.45
125	12.31	5.65
130	12.76	5.90
140	13.65	6.35
150	14.54	6.80

Refer to local distributor or Kingspan Insulation price list for current stock and non-stock sizes.

FOR FLOORS

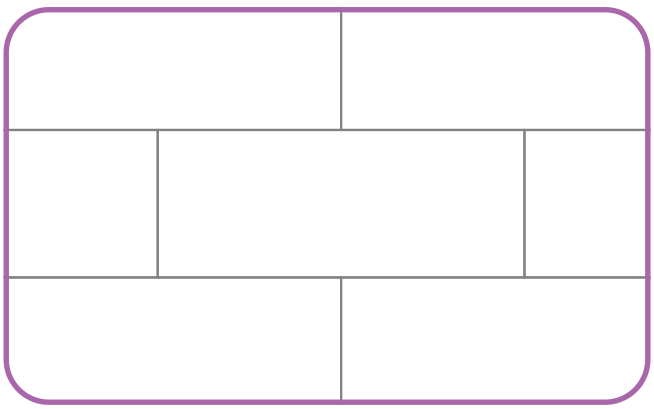
For floors

MOISTURE TOLERANCE
The product must be used above the Damp Proof Membrane (DPM) and must not be used where it may come into contact with moisture from the ground.

MEMBRANE
In applications where a concrete slab is specified or exists, Eco-Versal should be overlaid with protective membrane of minimum 500 gauge prior to application of the screed.

UFH SYSTEMS
Eco-Versal is suitable for use with most Underfloor Heating Systems (UFH). A minimum 500 gauge polythene sheet must be laid over the Eco-Versal boards before the UFH system is installed. Please refer to the UFH system manufacturer instructions when installing the UFH system.

LAYING PATTERN/FLOORS
On solid floors lay Eco-Versal closely butted with staggered joints.



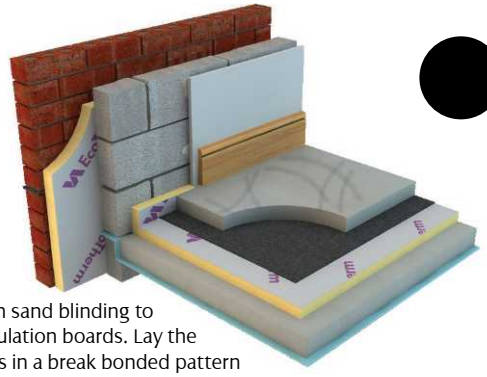


5 fixing methods for floors

NB Some values may have been omitted from the table because they do not meet the most common minimum requirements. Refer to local distributor or Kingspan Insulation price list for current stock and non-stock sizes.

Table 2 **Typical U-values for solid floor (above slab) using Eco-Versal**

65 mm screed, polythene sheet, Eco-Versal, DPM, 150 mm concrete



a thin sand blinding to
he insulation boards. Lay the
boards in a break bonded pattern
tted. Install a 25 mm upstand of insulation on top of the loose
Overlay insulation boards with a minimum 500 gauge
a Vapour Control Layer (VCL) and to prevent wet screed

Table 3 **Typical U-values for solid floor (below slab) using Eco-Versal**

65 mm screed, 150 mm concrete, polythene sheet, Eco-Versal, DPM



g should
ll compacted hardcore to
PM and loosely lay the Eco-Versal
a break bonded pattern with edges
ll a 25 mm upstand of insulation on top of the loose laid boards
insulation boards with a minimum 500 gauge polythene sheet
prevent cement penetrating board joints. Ensure the sheet is

Table 4 **Typical U-values for suspended block & beam floor using Eco-Versal**

65 mm screed, polythene sheet, Eco-Versal, DPM, 150 mm dense block & beam





Fibre-free Core



Table 5 **Typical U-values for suspended timber floor using Eco-Versal**

18 mm chipboard, Eco-Versal between 50 mm timber joists at 400 mm centres

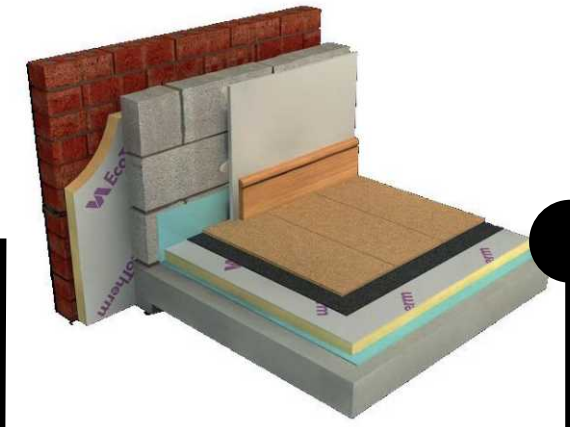


Table 6 **Typical U-values for floating timber floor using Eco-Versal**

For walls

For further guidance on the fire safety requirements of timber frame applications, please refer to `Structural Timber Buildings Fire Safety in Use Guidance Volume 1 - Pattern Book Systems' and `Structural Timber Buildings Fire Safety in Use Guidance Volume 2 - Cavity Barriers and Fire Stopping' by the Structural Timber Association.

BREATHABLE MEMBRANE
A breathable membrane should be fixed in accordance with the manufacturer's instructions.

VAPOUR CONTROL
In order to control the risk of condensation, a VCL should be installed behind the plasterboard (please note this may not be necessary where the plasterboard is an insulated plasterboard).

Table 7 **Typical U-values for timber frame walls using Eco-Versal**

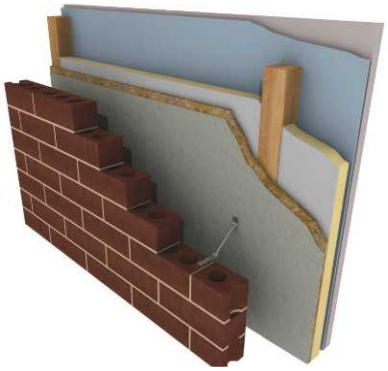
Thickness (mm)	Typical U-values (W/m ^{2}K)			Thickness (mm)	Typical U-values (W/m ^{2}K)
	Between Studs	Between & inside using 37.5 mm Eco-Liner	Insulated sheathing*		Insulated sheathing & between studs*
50	0.34	0.25	0.31	25 + 25	0.30
60	0.31	0.23	0.27	30 + 30	0.27
65	0.30	0.22	0.26	40 + 40	0.22
70	0.29	0.22	0.24	50 + 50	0.19
75	0.28	0.21	0.23	60 + 60	0.17
80	0.27	0.20	0.22	70 + 70	0.15
90	0.25	0.19	0.20	75 + 75	0.14
100	0.24	0.18	0.18	80 + 80	0.13
110	0.23	0.18			

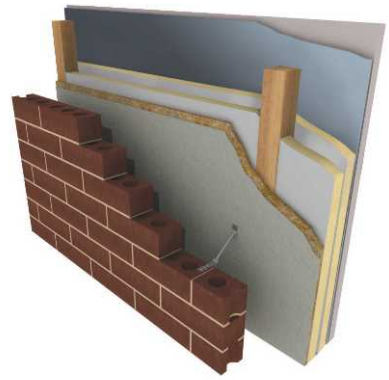
Calculations are based on brickwork, 50 mm cavity, breathable membrane, 9 mm OSB, 140 mm timber studs with Eco-Versal between, VCL + 15 mm plasterboard / 37.5 mm Eco-Liner, plaster skim.

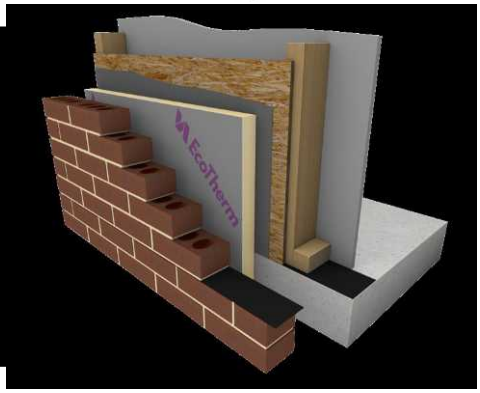
*Insulated sheathing: calculations are based on 102.5 mm brick outer leaf, 50 mm cavity, breathable membrane, Eco-Versal, 9mm OSB, 140 mm timber studs, 15 mm plasterboard, 3 mm skim.

For alternative wall constructions/applications please contact EcoTherm Technical Services to obtain a U-value calculation or head to www.ecotherm.co.uk to use EcoTherm's online U-value calculator.

3 fixing methods for timber frame







Eco-Versal can be installed on the inside surface of the timber studs in addition to between them to reduce the cold bridging effect and further improve the thermal performance of the wall. Insulated plasterboard such as Eco-Liner can be used as an alternative on the inside surface of the timber studs helping to reduce installation time. When fixed to timber framing, the maximum board span should be 600 mm. The insulation board must be installed flush with the stud and there should be no gap between insulation layers.

Install Eco-Versal tightly between the studs and flush against the OSB/ply sheathing. Use timber stop battens to prevent the insulation boards from moving and provide the specified air cavity within the frame if required. This cavity may be used as a service void.

When Eco-Versal is fitted in a continuous layer over the internal face of the timber studs, board joints should be butted to maintain continuity of insulation and joints taped using a 50 mm wide aluminium foil tape. Sealant can be used around all perimeter abutments to help further maintain the vapour seal.

For roofs

BREATHABLE MEMBRANE
A breathable membrane should be fixed in accordance with the manufacturer's instructions. Generally for a pitched roof, the membrane should be laid over the rafters and secured by use of tile or slate laths.

VAPOUR CONTROL
The requirement for a vapour control layer and/or undertile ventilation should be assessed to BS 5250: 2021 (Management of moisture in buildings. Code of practice).

VERTICAL BATTENS
In all over-rafter applications Eco-Versal boards should be fixed by use of vertical counter battens. The counter battens allow slate and tile laths to be fixed in the traditional manner.

The breathable membrane should be laid directly on to the Eco-Versal board before the counter battens are installed.

Alternatively, the counter battens can be installed on top of the Eco-Versal board and the breathable membrane installed after, draping over the battens.

LAYERS
Where very low U-values are required, it may be more practical to install the insulation between the rafters and use an insulated plasterboard, such as Eco-Liner, to the underside of the rafters.

Table 8 **Typical U-values for pitched roofs using Eco-Versal**

When calculating U-values to BS EN ISO 6946: 2017, the type of mechanical fixing used may change the thickness of insulation required. The U-value calculations for 'between & over' assume that over rafter layers of insulation are fixed using stainless steel fixings with a cross sectional area 7.9 mm^2) with 3.7 fasteners per m^2 (insulant thickness 0-40 mm), 6.2 per m^2 (insulant thickness 41-60 mm), 8.3 per m^2 (insulant thickness 61-80 mm) and 10.0 per m^2 (insulant thickness 81-100 mm).

For the purposes of these calculations the standard of workmanship has been assumed good, and therefore the correction factor for air gaps has been ignored.

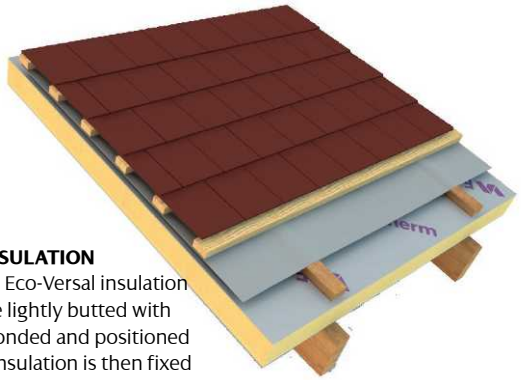
The figures quoted are for guidance only. A detailed U-value calculation and a condensation risk analysis should be completed for each project.

Calculations are based on tiles on battens, counter battens, breathable membrane, Eco-Versal, timber rafters at 400 mm centres (*150 mm unventilated), VCL + 12.5 mm plasterboard/37.5 mm Eco-Liner, plaster skim.

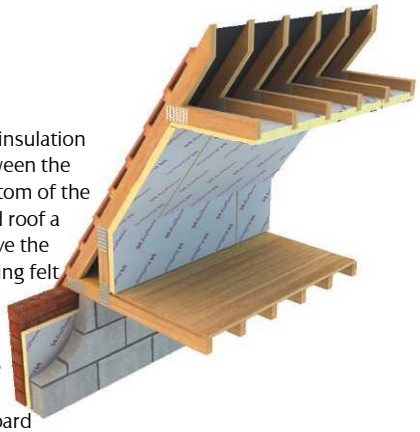
For alternative wall constructions/applications please contact EcoTherm Technical Services to obtain a U-value calculation or head to www.ecotherm.co.uk to use EcoTherm's online U-value calculator.

3 fixing methods for roofs

Dependent on the U-value required and the roof design, different approaches can be taken:

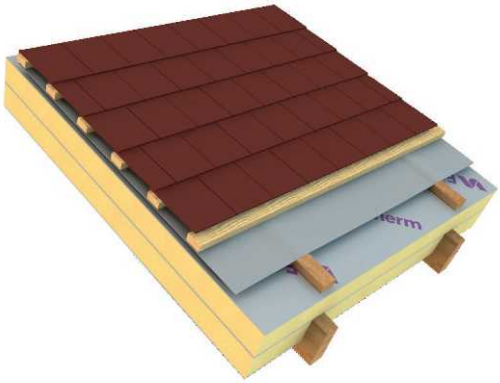


ER INSULATION
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The insulation is then fixed



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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 (Respiratory 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.

HEALTH AND SAFETY

Eco-Versal is chemically inert. 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. 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.

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.**

Consider Eco-Liner in combination with Eco-Versal to achieve a lower U-value and insulate & dry line in one application. Further details are available from EcoTherm Technical services or at www.ecotherm.co.uk

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