EcoTherm®
Insulation

STRUCTURAL INSULATION

Quick Guide

- ☑ BUILDING REGULATIONS
- ☑ PRODUCT SELECTION
- ☑ INSTALLATION ESSENTIALS
- ☑ STRUCTURAL APPLICATIONS
- ☑ PRODUCT INFORMATION

EASY TO SELECT
EASY TO INSTALL
EASY WITH ECOTHERM

About EcoTherm

EcoTherm insulation...

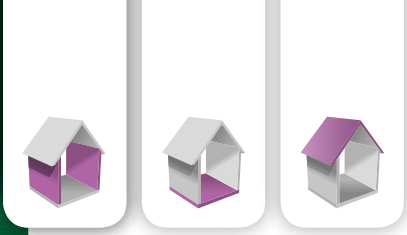
...comprises fibre free rigid polyisocyanurate (PIR) insulation sandwiched between two high performance facings to create a tough, durable, light weight insulation board that performs whilst reducing the overall cost to build.

EcoTherm Insulation (UK) Ltd is one of the UK's largest PIR thermal insulation suppliers. In addition to a standard range of insulation boards EcoTherm produces speciality products that offer Class O fire performance or time saving multi application benefits. EcoTherm's product range is suitable for use within flat and pitched roofs, walls, floors and ceilings in new and existing buildings.

Manufactured under management systems certified to ISO 9001: 2008, ISO 14001: 2004 and BS OHSAS 18001: 2007, EcoTherm's boards are recognised for their compressive strength, low weight, ease of installation and excellent thermal performance. EcoTherm is constantly developing and testing its insulation boards to bring new, innovative and improved products to the market.

EcoTherm's Technical Services team provides a comprehensive service, assisting with product queries, U-value calculations, Condensation Risk Analysis and general specification and application advice. EcoTherm is proud to offer these services from its Head Office in Basildon, Essex, along with first class customer service and marketing support.

Contents



About PIR

Fibre-free Core

Polyisocyanurate (PIR), the core of EcoTherm's rigid insulation boards, has evolved from polyurethane (PUR). Polyurethane is a material that has been used as an insulation material since the 1930s and you will find it in many every day products. PIR insulation boards offer many advantages when compared with other traditional insulation materials, and over their useful life will save 80 times more energy than was used to make them.

EcoTherm PIR features & benefits

Excellent thermal performance
EcoTherm's PIR insulation boards achieve low lambda values, as low as just 0.021W/mK with EcoTherm's PrO range.

PIR users require approximately half the thickness of traditional forms of insulation to meet the same level of thermal performance - don't adjust your standard construction design, optimise the space you save.

Achieve current and future UK Building Regulations / Standards
EcoTherm Insulation products can be installed with ease, adding minimal thickness, creating thinner constructions and more space for the homeowner or building occupants.

Choosing an insulation with good thermal performance will contribute to a thermally efficient building and can provide a good return on investment after just a few years.

Lightweight
PIR boards are easy to handle and transport making installation much easier and quicker than traditional insulants.

Their low weight also lends themselves to modern methods of construction and lighter, supporting structures.

Durable
Lifelong thermal insulation - the need to replace PIR insulation is highly unlikely due to its rigidity, durability and excellent compressive strength.

It will not rot, sag or decay and will therefore continue to deliver designed insulation values throughout the lifetime of the building.

Resilient
The insulation core and facings resist attack by mould and microbial growth.

Therefore there is not a need to replace decaying insulation.

Non-irritant
EcoTherm insulation boards are non-irritant due to their fibre free core. Handling them will not cause skin irritation.

Easy to cut
Due to its rigidity and lightweight core, EcoTherm Insulation is simple to cut using a fine tooth saw.

Availability
EcoTherm has the majority of its product range in stockists around the UK. Therefore most of EcoTherm's products can be purchased or delivered quickly to meet your demanding schedule.

Time & money saving
EcoTherm produces speciality products, designed to cut costs and time from projects.

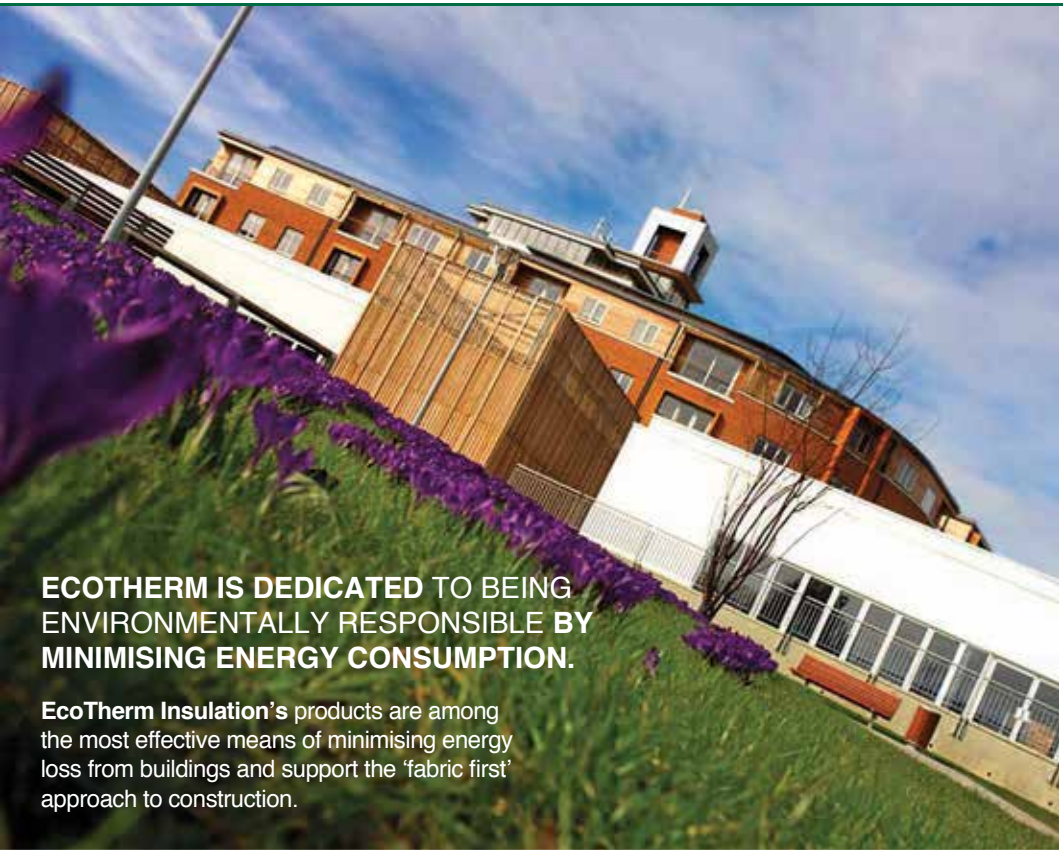
EcoTherm Eco-Liner is a 2in1 application board that insulates and dry lines walls at the same time, meaning only one board to cut, carry and fix.

Certified
*Backed with BBA Approvals, Energy Saving Trust Recommendation and management systems certified to ISO 9001: 2008, ISO 14001: 2004 and BS OHSAS 18001: 2007.

EcoTherm's customers can be assured to receive high quality, sustainable products and services.

* please see product pages for details on product specific certifications

EcoTherm and the Environment



ECOTHERM IS DEDICATED TO BEING ENVIRONMENTALLY RESPONSIBLE **BY MINIMISING ENERGY CONSUMPTION.**

EcoTherm Insulation's products are among the most effective means of minimising energy loss from buildings and support the 'fabric first' approach to construction.

EcoTherm Insulation products are manufactured with a CFC and HCFC-free blowing agent, that has zero Ozone Depletion Potential (ODP) and a low Global Warming Potential (GWP). Achieving ISO 14001: 2004 accreditation reflects EcoTherm's commitment to environmental sustainability. EcoTherm Insulation products with a certified BRE Global Green Guide rating of A+ are available subject to enquiry.

UK Building Regulations & Standards

Building Regulations and Standards apply statutory requirements on building work in the UK for new and existing buildings. Not only do they provide building standards with regards to design, quality, sustainability, and health and safety, but they keep the UK on track with its climate change commitments (targeting an 80% reduction in carbon emissions by 2050). Insulation plays a key part in meeting these requirements and it is important they are adhered to.

Did you know?

The fine for contravening Building Regulations/ Standards can be up to £5000 and an additional £50 per day until the work is rectified to the correct standard. These fines usually apply to the builder or contractor, however, action can also be taken against the home or building owner who will be required to alter or remove the work. For work that does not meet Building Regulations or has not been rectified, local authorities can withhold completion certificates and the sub-standard work will appear on land search enquiries, affecting the sale of the property.

Supporting documents are available from the government that provide detailed information on each section of the Building Regulations and Standards. EcoTherm has compiled a summary of the insulation related elements of these documents and provided U-values that will help achieve compliance.

What is a U-value?

A U-value is the measure of heat loss through a building element (walls, floors or roofs). U-value calculations take into consideration all components of a building element (i.e. U-value calculations for cavity walls typically take the following into consideration; outer & inner surface resistance, outer brick/blockwork, cavity, insulation, inner blockwork, plaster dabs, plasterboard and plaster skim).

U-value calculations are available free of charge from EcoTherm's Technical Services or 24/7 with the online U-value calculator at www.ecotherm.co.uk.

The figures and information quoted are for guidance only. Insulation thicknesses quoted are dependent on the roof deck and build up. Official Building Regulation / Standard documentation should always be consulted. Contact EcoTherm Technical Services for detailed U-value calculations and condensation risk analysis which should be completed for each project.

England (from 6th April 2014)

New Dwellings (Domestic Buildings) - Approved Document L1A/ADL1A

Approved Document L1A looks at the entire building's performance and CO_2 emissions, rather than isolating one particular element. All dwellings (domestic buildings) must be designed and built so the individual Dwelling CO_2 Emissions Rate (DER) is no worse than the Target CO_2 Emissions Rate (TER). The TER is based upon the performance of a defined Notional Dwelling.

A new requirement to also reach a Target Fabric Energy Efficiency (TFEE) brings the need to specify improved insulation standards and a focus on thermal bridging and air tightness, again based on a Notional Dwelling. Introducing a target for the Dwelling Fabric Energy Efficiency (DFEE) ensures that a 'fabric first' approach is taken throughout the building, which ultimately makes it easier to reach the TER.

Both the Dwelling Emission Rate (DER) and Dwelling Fabric Energy Efficiency (DFEE) are calculated using a calculation methodology called SAP (Standard Assessment Procedure) 2012. If the dwelling is built precisely to match the Notional Dwelling criteria, it should meet the Target Emission Rate (TER) and Target Fabric Energy Efficiency (TFEE). Note that other factors need to be taken into consideration including continuous building fabric insulation, air permeability, thermal bridging, information submission (design and build values) and limiting the effects of heat gains in summer.

The area-weighted average U-values, taken from the Notional Dwelling specification (used to set the TER and TFEE targets), are shown in table 1 below.

The actual specification required for a compliant building and necessary building fabric U-value targets may vary depending on the actual overall proposed specification and the outcome of the energy assessment.

Table 1

	ROOFS	WALLS	FLOORS
Notional Dwelling area weighted average U-value	0.13	0.18	0.13

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

Existing Dwellings (Domestic Buildings) - Approved Document L1B/ADL1B

Existing dwellings differ from new dwellings, in that they do not have to achieve a whole building Target CO_2 Emissions Rate (TER, see New Dwellings above). However, existing dwellings do have to meet certain target U-values for building elements (walls, floors and roofs).

The target U-values for existing dwellings or new elements within them are shown in table 2 below.

Table 2

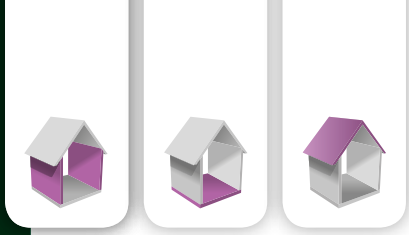
	ROOFS				WALLS		FLOORS	
	FOR REPLACED OR REFURBISHED ROOFS		NEW ELEMENTS (EXTENSION/ CONVERSION)		EXISTING WALLS (REFURB) REFURBISHED ROOFS	NEW WALLS (EXTENSIONS)	EXISTING FLOORS (REFURB)	NEW FLOORS (EXTENSIONS)
	Ceiling level	Rafter level	Ceiling level	Rafter level				
Required area weighted average U-value	0.16	0.18	0.16	0.18	0.30	0.28	0.25	0.22

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

New Buildings other than Dwellings - Approved Document L2A/ADL2A

Approved Document L2A adopts the same approach to Approved Document L1A, taking the entire building's performance and CO_2 emissions into consideration. All new buildings other than dwellings must be designed and built with their Building CO_2 Emissions Rate (BER) being no worse than the Target CO_2 Emissions Rate (TER). The TER is set from a Notional Building of same size and shape to the actual building. There are three defined Notional Buildings; heated and cooled buildings (that are side lit or unlit), and toplit buildings. The specification for each building type is summarised in Section 5 of ADL2A. CO_2 Emissions Rates for buildings other than dwellings are calculated using the Simplified Building Energy Model (SBEM).

Special considerations are made for low energy demand buildings, modular/portable buildings, temporary buildings, industrial sites, workshops, and non-residential agricultural buildings. ADL2A should be consulted for further details. If the building is built to match the Notional Building specification, its BER should meet the TER. Note that other factors need to be taken into consideration including continuous building fabric insulation, air permeability, thermal bridging, performance testing and limiting the effects of heat gains in summer.



Scotland

(from 3rd October 2011 & October 2015)

The area weighted average U-values, used in the Notional Building specifications for setting the TER, are shown in table 3 below. The actual specification required for a compliant building and necessary building fabric U-value targets may vary depending on the actual overall proposed specification and the outcome of the energy assessment.

Although ADL2A is for new buildings other than dwellings, there are some exceptions if a dwelling is featured within the new building. For more details on these exceptions ADL2A should be referred to.

Table 3

	ROOFS	WALLS	FLOORS
Notional Building area weighted average U-value	0.18	0.26	0.22

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

Existing Buildings other than Dwellings - Approved Document L2B/ADL2B

Existing buildings do not require a Target CO_2 Emissions Rate, however they do require a target U-value to be met for building elements (walls, floors and roofs).

The target U-value for flat roofs on existing buildings other than dwellings are shown in table 4 below.

Table 4

	ROOFS				WALLS		FLOORS	
	FOR REPLACED OR RENOVATED ROOFS		NEW ELEMENTS (EXTENSION/ CONVERSION)		EXISTING WALLS (REFURB) REFURBISHED ROOFS	NEW WALLS (EXTENSIONS)	EXISTING FLOORS (REFURB)	NEW FLOORS (EXTENSIONS)
	Ceiling level	Rafter level	Ceiling level	Rafter level				
Required U-value	0.16	0.18	0.16	0.18	0.30	0.28	0.25	0.22

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

Domestic Buildings (Dwellings) Technical Handbook: Section 6 Energy

New Dwellings

The Scottish Technical Handbook for Domestic Buildings looks at the entire building's performance and CO_2 emissions, rather than isolating one particular element. All domestic buildings must be designed and built so their individual Dwelling CO_2 Emissions Rate (DER) is no worse than the Target CO_2 Emissions Rate (TER).

The TER is generated from a package of measures set for each main heating fuel type; if buildings are constructed following the full package, then it is likely that the DER will meet the TER. As a simplified approach, the dwelling can be considered to reduce CO_2 emissions to the same level. CO_2 Emission Rates are calculated using a calculation methodology called SAP (Standard Assessment Procedure) 2012.

The typical Notional Dwelling U-values and target for building elements are shown to in tables 5 & 6 below.

Table 5
From 3rd October 2011

	ROOFS	WALLS	FLOORS
Notional Dwelling area weighted average U-value	0.13	0.19	0.15

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

Table 6
From October 2015

	ROOFS	WALLS	FLOORS
Notional Dwelling area weighted average U-value	0.11	0.17	0.15

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

Existing Dwellings

For existing domestic buildings, the Scottish Technical Handbook provides specific U-values based upon the particular element (walls, floors and roofs) that is being replaced, renovated or for extensions and conversions. There are different requirements for new elements (extensions or conversions) and the Technical Handbook should be referred to for details on these.

U-values shown in tables 7 & 8 below are the requirements for existing buildings.

Table 7
From 3rd October 2011

		FOR EXTENSIONS OR REFURBISHMENTS			
		ROOFS		WALLS	FLOORS
		Ceiling level	Rafter level		
Required area weighted average U-value	Where U-values for wall and roof of the existing dwelling are poorer than 0.7 and 0.25 respectively	0.13	0.15	0.19	0.15
	Where the above wall and roof U-values do not apply	0.15	0.18	0.22	0.18

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

Table 8
From October 2015

		FOR EXTENSIONS OR REFURBISHMENTS			
		ROOFS		WALLS	FLOORS
		Ceiling level	Rafter level		
Required area weighted average U-value	Where U-values for wall and roof of the existing dwelling are poorer than 0.7 and 0.25 respectively	0.11	0.13	0.17	0.15
	Where the above wall and roof U-values do not apply	0.15	0.18	0.22	0.18

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

Non-Domestic Buildings Technical Handbook: Section 6 Energy

New Buildings

Matching the requirements for new domestic buildings, the Scottish Technical Handbook sets a Target CO_2 Emissions Rate (TER) for non-domestic buildings based on Notional Buildings that the individual Buildings CO_2 Emissions Rate (BER) must meet. The TER is generated from a set of Notional Buildings; if buildings are constructed within these parameter values their BER should meet the TER. CO_2 Emissions Rates are calculated using the Simplified Building Energy Model (SBEM).

The actual specification required for a compliant building and necessary building fabric U-value targets may vary depending on the actual overall proposed specification and the outcome of the energy assessment.

The typical Notional Building U-values and target for building elements are shown in tables 9 & 10 below.

Table 9
From 3rd October 2011

	ROOFS		WALLS	FLOORS
	Ceiling level	Rafter level		
Notional Building area weighted average U-value	0.13	0.15	0.19	0.15

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

Table 10
From October 2015

		ROOFS	WALLS	FLOORS
Notional Building area weighted average U-value	Heated + Natural ventilation	0.18	0.23	0.22
	Mech. Ventilated / Cooled	0.16	0.20	0.20

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

Existing Buildings

The Scottish Technical Handbook sets specific U-values based upon the particular building element (wall, floor or roof).

For existing non-domestic buildings the U-values in tables 11 & 12 below show the requirements for building elements.

Table 11 ***From 3rd October 2011***

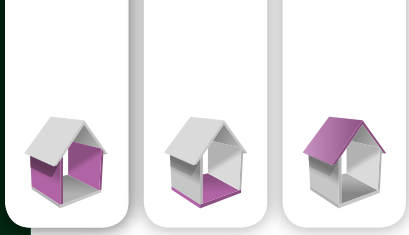
	ROOFS				WALLS		FLOORS	
	FOR REPLACED OR RENOVATED ROOFS		NEW ELEMENTS (EXTENSION)		EXISTING WALLS (REFURB) REFURBISHED ROOFS	NEW WALLS (EXTENSIONS)	EXISTING FLOORS (REFURB)	NEW FLOORS (EXTENSIONS)
	Ceiling level	Rafter level	Ceiling level	Rafter level				
Required area weighted average U-value	0.15	0.18	0.13	0.18	0.22	0.19	0.18	0.15

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

Table 12 ***From October 2015***

	ROOFS		WALLS		FLOORS	
	FOR REPLACED OR RENOVATED ROOFS	NEW ELEMENTS (EXTENSION)	EXISTING WALLS (REFURB) REFURBISHED ROOFS	NEW WALLS (EXTENSIONS)	EXISTING FLOORS (REFURB)	NEW FLOORS (EXTENSIONS)
Required area weighted average U-value	0.25	0.15	0.30	0.25	0.25	0.20

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.



Wales (from 31st July 2014)

New Dwellings (Domestic Buildings) - Approved Document L1A/ADL1A

Approved Document L1A looks at the entire building's performance and CO_2 emissions, rather than isolating one particular element. All dwellings (domestic buildings) must be designed and built so their individual Dwelling CO_2 Emissions Rate (DER) is no worse than the Target CO_2 Emissions Rate (TER). The TER is based upon the performance of a defined Notional Dwelling. The Dwelling Emission Rate (DER) is calculated using a calculation methodology called SAP (Standard Assessment Procedure) 2012.

In addition to meeting the TER, there are also mandatory minimum energy efficiency standards (U-values) for the building elements (walls, floors and roofs) to achieve.

If the dwelling is built to match the Notional Dwelling criteria and better the limiting fabric U-values, it should meet the Target Emission Rate (TER). Note that other factors need to be taken into consideration including thermal bridging, ventilation, information submission (design and build values) and limiting the effects of heat gains in summer.

The typical Notional Dwelling U-values and target for building elements are shown in table 13 below.

Table 13

	ROOFS	WALLS	FLOORS
Notional Dwelling area weighted average U-value	0.13	0.18	0.13

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

Existing Dwellings (Domestic Buildings) - Approved Document L1B/ADL1B

Existing dwellings differ from new dwellings, in that they do not have to achieve a whole building Target CO_2 Emissions Rate (TER, see New Dwellings above). However, existing dwellings do have to meet certain target U-values for building elements (walls, floors and roofs). The target U-values for building elements within existing dwellings or new elements are shown in table 14 below.

Table 14

	ROOFS			WALLS		FLOORS	
	FOR REPLACED OR RENOVATED ROOFS		NEW ELEMENTS (EXTENSION)	EXISTING WALLS (REFURB) REFURBISHED ROOFS	NEW WALLS (EXTENSIONS)	EXISTING FLOORS (REFURB)	NEW FLOORS (EXTENSIONS)
	Ceiling level	Rafter level					
Required area weighted average U-value	0.16	0.18	0.15	0.30	0.21	0.25	0.18

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

New Buildings other than Dwellings - Approved Document L2A/ADL2A

Approved Document L2A adopts a similar approach to Approved Document L1A, taking the entire building's performance and CO_2 emissions into consideration. All new buildings other than dwellings must be designed and built with their Building CO_2 Emissions Rate (BER) being no worse than the Target CO_2 Emissions Rate (TER).

The TER is set from a Notional Building of the same size and shape to the actual building. There are three defined Notional Buildings; heated and cooled buildings (that are side lit or unlit), and toplit buildings. The specification for each building type is summarised in ADL2A. CO_2 Emissions Rates for buildings other than dwellings are calculated using the Simplified Building Energy Model (SBEM) or other approved software.

In addition to meeting the TER, a new Target Primary Energy Consumption (TPEC) rate has been introduced for new buildings other than dwellings. Put simply, this new target is aimed at two factors - energy efficiency of the fabric and its building services.

The TPEC ensures these two factors are carefully considered and prevents renewable technologies being highly specified to counteract a lower performing fabric or services standards.

If the building is built to match the Notional Building specification, its BER should meet the TER. Note that other factors need to be taken into consideration including continuous building fabric insulation, air permeability, thermal bridging, performance testing and limiting the effects of heat gains in summer.

The required U-value for building elements, as per the Notional Building specifications, are shown in table 15 below.

Table 15

	ROOFS	WALLS	FLOORS
Notional Building area weighted average U-value	0.18	0.26	0.22

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

Although ADL2A is for new buildings other than dwellings, there are some exceptions if a dwelling is featured within the new building. For more details on these exceptions ADL2A should be referred to.

Special considerations are made for low energy demand buildings, modular/portable buildings, temporary buildings, industrial sites, workshops, and non-residential agricultural buildings. ADL2A should be consulted for further details.

Existing Buildings other than Dwellings - Approved Document L2B/ADL2B

Existing buildings do not require a Target CO_2 Emissions Rate, however they do require a target U-value to meet for building elements (walls, floors and roofs). There is a new consideration for the character of the building, with buildings that are essentially domestic in character having more stringent targets to meet for extensions.

The target U-values for building elements within existing buildings other than dwellings are shown below in table 16.

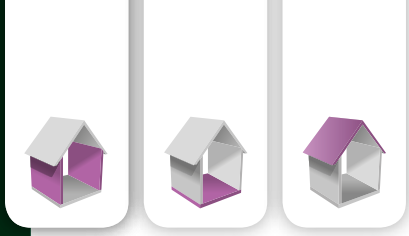
Table 16

	ROOFS				WALLS		FLOORS	
	FOR REPLACED OR RENOVATED ROOFS		NEW ELEMENTS (EXTENSION)		EXISTING WALLS (REFURB) REFURBISHED ROOFS	NEW WALLS (EXTENSIONS)	EXISTING FLOORS (REFURB)	NEW FLOORS (EXTENSIONS)
	Ceiling level	Rafter level	Ceiling level	Rafter level				
Required area weighted average U-value	0.16	0.18	0.15	0.15 *** / 0.18	0.30	0.21 *** / 0.26	0.25	0.18 *** / 0.22

Typical PIR insulation thicknesses to meet these U-values are available on the application pages within this guide.

**** Rooms for residential purposes (for example in nursing homes, student accommodation, etc.) are not dwellings, and so ADL2B will apply.*

Product Selector



Application	Suitable products
For Roofs	
Between rafters pg 15	Eco-Versal pg 32 PrO-Versal pg 33
Between & under rafters pg 16 & 17	
Over rafters pg 18	
Between & over rafters pg 19	
Loft floor pg 20	
See the EcoTherm Flat Roof Insulation Quick Guide for information on flat roof products.	
For Walls	
Cavity wall pg 21	Eco-Cavity pg 35
Internal wall (dry lining) pg 22 & 23	Eco-Liner pg 34
Timber frame wall pg 24	Eco-Versal pg 32 PrO-Versal pg 33
For Floors	
Solid floor below slab pg 25	Eco-Versal pg 32 PrO-Versal pg 33
Solid floor above slab pg 26	
Suspended beam & block floor pg 27	
Suspended timber floor pg 28	
Underfloor heating pg 29	Eco-UFH pg 36 Eco-Versal pg 32
Soffits (structural ceilings) pg 30	PrO-Soffit Plus pg 38 PrO-Soffit pg 37

Installation Essentials

Before installing EcoTherm Insulation, please read through the below Installation Essentials to ensure that required protection and methods of installation are observed.

Handling and Cutting

- Do not drop boards.
- Damaged boards should not be used.
- Wear appropriate hand and eye protection.
- To cut, use a sharp knife or fine tooth saw.
- Ensure accurate trimming to ensure continuity of insulation and to achieve closely butted edges where appropriate.
- Cutting with power tools generates non-hazardous dust, so should be kept to a minimum.
- Do not breathe in dust, avoid contact with skin and eyes.
- 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 should be worn.

Health and Safety

EcoTherm Insulation products are chemically inert and safe to use. Product Safety Datasheets are available 24/7 on the EcoTherm website, or on request via EcoTherm Technical Services.

Storage

Packs are stretch wrapped in recyclable polythene. Store boards in a flat, dry area off the ground away from potential mechanical or water damage and sources of ignition. The boards must be protected from prolonged exposure to sunlight and should be stored either indoors or covered with opaque polyethylene or a tarpaulin. The boards must be kept dry at all times. At no time should they be left exposed to rain or snow. If boards do get wet, contact EcoTherm Technical Services for guidance. EcoTherm Eco-Liner boards that have been wetted should not be used.

Spanning

When fixing EcoTherm Insulation boards to timber framing, metal channels, rafters or battens, the maximum board span should be 600mm.

Work on existing structures

When installing EcoTherm insulation boards onto an existing structure (refurbishment or upgrade), the condition of the existing structure should be assessed to ensure it is in good condition and water tight. EcoTherm insulation boards should not be used to hide or isolate damp. Where mechanically fixing EcoTherm insulation, use a detector to ensure no cables, pipes or wires are running within the area. Always check with EcoTherm Technical Services when upgrading existing insulation for guidance on potential condensation risk.

Applications & Installation Details

PITCHED ROOF APPLICATIONS

WALL APPLICATIONS

FLOOR APPLICATIONS

Between Rafters | Unventilated

INSTALLATION DETAILS

- *If installing the insulation from the outside, use timber stop battens to place the insulation correctly.*
- Measure the exact distance between rafters to allow for variances and achieve tightly fitted boards.
- Cut the insulation boards to the required measurements (see Installation Essentials on page 13 for guidance on cutting).
- *If installing the insulation from the inside, push the cut insulation up between the rafters to fit tightly, sitting flush with the bottom of the rafter.*
- Ensure a minimum 25mm air gap is retained above the insulation board and below the breathable membrane. This is easily achieved with a timber stop batten installed inside the rafter.
- Fill any small gaps with PU foam for improved thermal performance.
- A Vapour Control Layer (VCL) should be installed under the rafters (a polythene sheet is recommended over the insulation in areas of potential high humidity i.e. bathrooms or kitchens).
- For internal finishing, install plasterboard over the VCL using drywall screws penetrating 25mm into the timber.
- Where very low U-values are required, it may be practical to add a second layer of insulation board or Eco-Liner (insulated plasterboard) under the rafters in addition to between (see page 16).

Typical U-values using Eco-Versal

Thickness (mm)		Typical U-values (W/m²K)	
		Between 400mm centres	Between 600mm centres
90	150mm timber rafters	0.29	0.26
100		0.28	0.25
110		0.26	0.24
120		0.25	0.22
125		0.24	0.22
130	175mm timber rafters	0.23	0.21
140		0.22	0.20
150		0.21	0.19
160	200mm timber rafters	0.19	0.18
170		0.19	0.17

Calculations are based on outside surface resistance, tiles on battens, breathable membrane, timber rafters at thickness and centres stated above, PIR insulation, 12.5mm plasterboard, inside surface resistance.

The figures quoted above are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services or using EcoTherm's online U-value calculator at www.ecotherm.co.uk

SAVE TIME

Use insulated plasterboard, **Eco-Liner**, under rafters to achieve better U-values and dry line in one application

IDEAL FOR LOFT CONVERSIONS

Between & Under Rafters | Ventilated

INSTALLATION DETAILS

- Ensure a minimum 50mm air gap is retained above the insulation board and below the membrane/ sarking felt. This is easily achieved with a timber stop batten installed inside the rafter.
- Measure the exact distance between rafters to allow for variances and achieve tightly fitted boards.
- Cut the insulation boards to required measurements (see Installation Essentials on page 13 for guidance on cutting).
- Push the cut insulation up between the rafters to fit tightly, sitting flush with the bottom of the rafter.
- Fill any small gaps with PU foam for improved thermal performance.
- Install Eco-Liner (insulated plasterboard) closely butted to insulate under the rafters and achieve a plasterboard finish in one application (VCL not required when using this method).
- Alternatively, a secondary thinner layer of lightly butted insulation can be installed to the underside of the rafters. Ensure insulation boards are supported by fixings to the underside of the rafters, with long board edges running across the rafters. Apply foil tape at board joints to create a Vapour Control Layer (VCL) and finish with 12.5mm plasterboard using drywall screws at 200mm centres.

Typical U-values using Eco-Versal

Thickness (mm)		Typical U-values (W/m²K)	
		Between 400mm centres	Between 600mm centres
		plus 72.5mm Eco-Liner under rafters	
70	150mm timber rafters	0.19	0.18
80		0.18	0.17
90		0.17	0.16
100		0.16	0.15
110	175mm timber rafters	0.15	0.14
120		0.14	0.14
125		0.14	0.13
130	200mm timber rafters	0.14	0.13
140		0.13	0.13
150		0.13	0.12

Calculations are based on outside surface resistance, tiles on battens, breathable membrane, timber rafters at thickness and centres stated above, 50mm cavity, PIR insulation between rafters, 72.5mm Eco-Liner (insulated plasterboard) below rafters, inside surface resistance.

The figures quoted above are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services or using EcoTherm's online U-value calculator at www.ecotherm.co.uk

SAVE TIME

Use insulated plasterboard, **Eco-Liner**, under rafters to achieve better U-values and dry line in one application

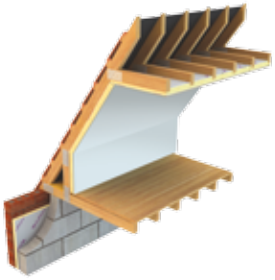
OTHER ECOTHERM PRODUCTS SUITABLE FOR **BETWEEN & UNDER RAFTER APPLICATION**

PrO-Versal
for an even thinner insulation solution between rafters

see page **33** for more details

IDEAL FOR NEW BUILD OR NEW ROOFS

Between & Under Rafters | Unventilated



INSTALLATION DETAILS

PARTIAL FILL: Install a timber batten inside the rafter to provide a stop for the insulation.

FULL FILL: Install the insulation board to match the thickness of the rafter.

- Measure the exact distance between rafters to allow for variances and achieve tightly fitted boards.
- Cut the insulation boards to required measurements (see Installation Essentials on page 13 for guidance on cutting).
- Push the cut insulation up between the rafters to fit tightly, sitting flush with the bottom of the rafter.
- If installing the insulation from the outside, use timber stop battens to place the insulation correctly, flush with underside of the rafter.
- Fill any small gaps with PU foam for improved thermal performance.
- Install Eco-Liner (insulated plasterboard) closely butted to insulate under the rafters and achieve a plasterboard finish in one application (Vapour Control Layer (VCL) not required when using this method).
- Alternatively, a secondary thinner layer of lightly butted insulation can be installed to the underside of the rafters. Ensure insulation boards are supported by fixings to the underside of the rafters, with long board edges running across the rafters. Apply foil tape at board joints to create a VCL and finish with 12.5mm plasterboard using drywall screws at 200mm centres.
- Install the breather membrane above the rafters in accordance with manufacturers instructions. For partial fill between rafters, fix timber battens to rafters and allow the membrane to sag. For full fill between, fix counter battens over the membrane.

Typical U-values using Eco-Versal

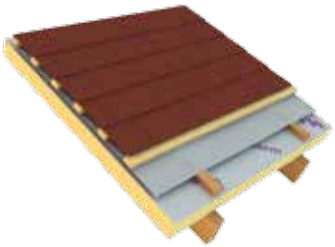
Thickness (mm)		Typical U-values (W/m²K)	
		Between 400mm centres	Between 600mm centres
		plus 72.5mm Eco-Liner under rafters	
60	150mm timber rafters	0.18	0.18
70		0.17	0.17
80		0.16	0.16
90		0.16	0.15
100		0.15	0.14
110		0.14	0.14
120		0.14	0.13
125	175mm timber rafters	0.13	0.13
130		0.13	0.13
140		0.13	0.12
150		0.12	0.12
160	200mm timber rafters	0.12	0.11
170		0.11	0.11

Calculations are based on outside surface resistance, tiles on battens, breathable membrane, timber rafters at thickness and centres stated above, PIR insulation between rafters, 72.5mm Eco-Liner (insulated plasterboard) below rafters, inside surface resistance.

The figures quoted above are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services or using EcoTherm's online U-value calculator at www.ecotherm.co.uk

IDEAL FOR NEW BUILD OR NEW ROOFS

Over Rafters



INSTALLATION DETAILS

- Install a treated timber batten (stop rail) of equal thickness to the insulation at the eaves on top of the rafters.
- Place insulation boards over rafters and butted to the stop rail. Long board edges should run across the rafters.
- Ensure insulation boards are staggered with lightly butted edges that are supported by rafters.
- If required, cut the insulation boards to required measurements (see Installation Essentials on page 13 for guidance on cutting).
- Fix the insulation boards by use of a counter batten (minimum 38 x 38mm) placed above the insulation down the line of each rafter.
- Use headed helical nails to fix through the vertical batten and insulation into the rafter below.
- Install the breather membrane in accordance with the manufacturer's instructions.
- Fix tile battens over the counter battens at appropriate spacing to suit tile or slate lath fixings.
- A Vapour Control Layer (VCL) or plasterboard should be installed to the underside of the rafters.
- Where very low U-values are required, it may be practical to add a layer of insulation boards between the rafters in addition to over (see page 19).

Typical U-values using Eco-Versal

Thickness (mm)	Typical U-values (W/m²K)	
	Between 400mm centres	Between 600mm centres
70	0.25	0.25
80	0.23	0.23
90	0.21	0.21
100	0.18	0.20
110	0.17	0.19
120	0.16	0.16
130	0.15	0.15
140	0.14	0.14
150	0.13	0.13
160	0.12	0.12
170	0.12	0.12
180	0.11	0.11
190	0.11	0.11
200	0.10	0.10

Calculations are based on outside surface resistance, tiles on battens, breathable membrane, PIR insulation, 150mm timber rafters at centres stated above, vapour control layer, plasterboard and skim, inside surface resistance.

Adjustments for fixings to be included once fixing centres / type have been confirmed.

The figures quoted above are for guidance only. Detailed U–value calculations should be completed for each project by EcoTherm Technical Services or using EcoTherm's online U-value calculator at www.ecotherm.co.uk

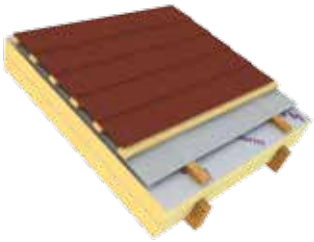
OTHER ECOTHERM PRODUCTS SUITABLE FOR **OVER RAFTER APPLICATION**

PrO-Versal
for an even thinner insulation solution between rafters

see page **33** for more details

IDEAL FOR NEW BUILD OR NEW ROOFS

Between & Over Rafters



INSTALLATION DETAILS

- Measure the exact distance between rafters to allow for variances and achieve tightly fitted boards.
- Cut the insulation boards to required measurements (see Installation Essentials on page 13 for guidance on cutting).
- If installing the between rafter insulation from the outside, use timber battens to position the insulation flush with top of the rafter.
- If installing the between rafter insulation from the inside, install the over layer of insulation first (following the below instructions) and push the insulation board up between the rafters to fit tightly and flush with the top of the rafter to meet the over insulation layer.
- Install timber battens to the inside of the rafter to hold the between rafter insulation in place.
- To install the over rafter insulation layer, install a treated timber batten (stop rail) of equal thickness to the insulation at the eaves on top of the rafters.
- Place insulation boards over rafters and butted to the stop rail. Long board edges should run across the rafters.
- Ensure insulation boards are staggered with lightly butted edges that are supported by rafters.
- If required, cut the insulation boards to required measurements (see installation essentials for guidance on cutting).
- Fix the insulation boards by use of a counter batten (minimum 38 x 38mm) placed above the insulation down the line of each rafter.
- Use headed helical nails through the vertical batten and insulation into the rafter below.
- Install the breather membrane in accordance with the manufacturer's instructions.
- Fix tile battens over the counter battens at appropriate spacing to suit tile or slate lath fixings.
- A Vapour Control Layer (VCL) or plasterboard should be installed to the underside of the rafters.

Typical U-values using Eco-Versal

Thickness (mm) between & over	Typical U-values (W/m²K)	
	Between 400mm centres	Between 600mm centres
40 + 40	0.25	0.25
50 + 50	0.21	0.21
60 + 60	0.18	0.18
70 + 70	0.16	0.15
75 + 75	0.15	0.15
80 + 80	0.14	0.14
90 + 90	0.13	0.12
100 + 100	0.12	0.11
110 + 110	0.11	0.10
120 + 120	0.10	0.09
125 + 125	0.10	0.09
130 + 130	0.09	0.09
140 + 140	0.09	0.08
150 + 150	0.08	0.08
150 + 160	0.08	0.08
150 + 170	0.08	0.07
150 + 180	0.07	0.07
150 + 190	0.07	0.07
150 + 200	0.07	0.07

Calculations are based on outside surface resistance, tiles on battens, breathable membrane, PIR insulation over rafters, 150mm timber rafters at centres stated above, PIR insulation between rafters, vapour control layer, plasterboard and skim, inside surface resistance.

Adjustments for fixings to be included once fixing centres / type have been confirmed.

The figures quoted above are for guidance only. Detailed U–value calculations should be completed for each project by EcoTherm Technical Services or using EcoTherm's online U-value calculator at www.ecotherm.co.uk

see page 32

BEST PRODUCT CHOICE

Eco-Versal

OTHER ECOTHERM PRODUCTS SUITABLE FOR
BETWEEN & OVER RAFTER APPLICATION

PrO-Versal
for an even thinner insulation solution between rafters

see page **33** for more details

IDEAL FOR UPGRADING EXISTING LOFT FLOORS

Loft Floor

INSTALLATION DETAILS

Over loft floor joists

- To minimise heat loss ensure joists are filled with insulation (between). For between joist application details see below.
- Place a layer of insulation boards over loft floor joists. Ensure boards are laid at right angles to the joists.
- Insulation boards should be laid in a staggered pattern with board edges supported by the joists. Fix insulation boards using wood screws, through the insulation, penetrating the joists at least 30mm.
- To utilise the loft floor as a storage space, minimum 9mm plywood, chipboard or OSB should be mechanically fixed over the joists. Where pedestrian access is required, a further layer of 18mm plywood, chipboard or OSB is recommended.
- When fixing screws, ensure any pipes, cables or wires are not penetrated. Care should be taken that no electrical cables are trapped between the insulation board and the joists. It is recommended to permanently mark on top of the board the location of any electrical cables / pipes etc that are covered.

Between loft floor joists

- Measure the exact distance between joists to allow for variances and achieve tightly fitted insulation boards.
- Cut the insulation boards to required measurements (see Installation Essentials on page 13 for guidance on cutting).
- Install 25 x 25mm treated softwood timber battens or galvanised steel saddle clips inside the joists, at the correct height to support the insulation boards and ensure the boards sit flush with the top of the joists.
- Push the insulation board tightly into the joists.
- Fill any gaps between joists and perimeter walls with either cut pieces of insulation board or PU foam.

Typical U-values using Eco-Versal

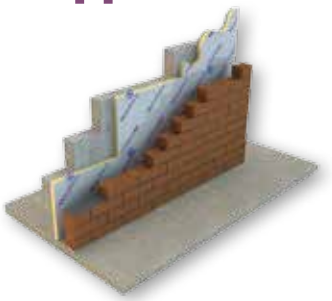
Thickness (mm)	Typical U-values (W/m^2K) Over loft floor joists
70	0.25
75	0.24
80	0.22
90	0.20
100	0.19
110	0.17
115	0.16
120	0.16
125	0.15
130	0.15
140	0.14
150	0.13
160	0.12

Calculations are based on outside surface resistance, tiles on battens, breathable membrane, 18mm chipboard, PIR insulation over timber joists, 9mm plywood, 150mm timber joists at 600 centres, vapour control layer, 12.5mm plasterboard & skim, inside surface resistance.

Thickness (mm)	Typical U-values (W/m^2K) Between & over joists
35mm + 35mm	0.25
40mm + 40mm	0.23
45mm + 45mm	0.21
50mm + 50mm	0.19
60mm + 60mm	0.17
65mm + 65mm	0.16
70mm + 70mm	0.15
80mm + 80mm	0.13

Calculations are based on outside surface resistance, tiles on battens, breathable membrane, 18mm chipboard, PIR insulation over and between timber joists, 9mm plywood, 150mm timber joists at 600 centres, vapour control layer, 12.5mm plasterboard & skim, inside surface resistance.

The figures quoted above are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services



Partial Fill Cavity Wall

INSTALLATION DETAILS

- A minimum 25mm clear cavity should always be maintained between the Eco-Cavity insulation board and outer wall leaf. The National House Building Council (NHBC) require 50mm clear cavity.
- Seek advice from wall tie manufacturer for the most suitable tie for the construction.
- Wall ties should include a retaining clip / disc to ensure insulation boards are held in place.
- Install the first row of wall ties at 600mm horizontal centres (2 per board) at a minimum of one course of blockwork below the Damp Proof Course (DPC).
- Construct the inner wall leaf up to 450mm (2 block courses) and install wall ties at 900mm horizontal centres.
- Install the first row of Eco-Cavity boards between the 2 rows of wall ties, tightly to the inner wall leaf and secure in place with a retaining clip / disc on each tie.
- Ensure each Eco-Cavity board is secured with a minimum of 3 wall ties. Additional ties may be required to meet BS5628-3:2001 (Code of practice for use of masonry. Materials and components, design and workmanship).
- Construct the outer wall leaf to meet the top of the Eco-Cavity boards and repeat the process (wall ties spaced at 450mm vertical centres and 900mm horizontal centres).
- Use insulated cavity closers at door and window openings.
- At gable walls Eco-Cavity should be continued 250mm beyond the top storey ceiling and a cavity tray installed to protect the top of the Eco-Cavity boards.

Typical U-values using Eco-Cavity

Thickness (mm)	Typical U-values (W/m²K)			
	Brick & dense block	Brick & medium block	Brick & light block	Light block & dense block
40	0.32	0.31	0.29	0.27
50	0.28	0.27	0.26	0.24
60	0.25	0.24	0.23	0.22
65	0.24	0.23	0.22	0.21
70	0.22	0.22	0.21	0.20
75	0.21	0.21	0.20	0.19
80	0.20	0.20	0.19	0.18
90	0.19	0.18	0.18	0.17
100	0.17	0.17	0.16	0.16
110	0.16	0.16	0.15	0.15
120	0.15	0.15	0.14	0.14

Calculations are based on outside surface resistance, external finish as above, 50mm cavity, PIR insulation, block as above, 12.5mm plasterboard and skim, inside surface resistance.

Lambda value of brick and block work above as follows: Brick 0.77 W/mK, dense block 1.13 W/mK, medium block 0.51 W/mK, light block 0.11 W/mK. Adjustments for fixings to be included once fixing centres / type have been confirmed.

The figures quoted above are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services or using EcoTherm's online U-value calculator at www.ecotherm.co.uk

USE INSULATED PLASTERBOARD, ECO-LINER, ON THE INTERNAL WALL TO ACHIEVE EVEN LOWER U-VALUES AND DRY LINE IN ONE APPLICATION

IDEAL FOR UPGRADING EXISTING WALLS

Internal Wall | Dot & Dab Application

INSTALLATION DETAILS

- Do not use Eco-Liner to hide or isolate damp or wet walls.
- If upgrading an existing wall, remove all fittings (skirting boards, rails, coving, radiators, socket facings etc) and ensure walls are clean, dry and free from protrusions. Strip gloss paint or vinyl wallpaper.
- When installing onto existing plastered walls, a bonding agent must be applied and allowed to fully dry prior to Eco-Liner installation.
- Set out the positioning of Eco-Liner and cut boards to size if required, to fit floor to ceiling of the room. Allow 15mm off the floor to ceiling height. Consideration should be given to windows, sockets, doors, phone cables etc.
- Prepare drywall adhesive to manufacturers instructions. Advice should be sought from the adhesive manufacturer to confirm suitability onto intended masonry substrate.
- Trowel a continuous band of adhesive around all wall edges and openings to provide a fire stop.
- Apply dabs of adhesive to the wall approximately 50-60mm wide x 250mm long, with at least 18 dabs per board (approx. 600mm centres vertically).
- Install Eco-Liner board onto the wall and adhesive dabs, tap the board with a straight edge ensuring the board is in the correct position.
- Come round the internal wall a minimum of 400mm.
- Once the adhesive has dried (approx. 24 hours), fix nailable plugs (2 per board to the tapered edge, ensuring 25mm penetration to wall).
- Eco-Liner boards should be tightly butted and joints taped. Gaps between the board and floor can be filled with PU foam or flexible acrylic sealant.
- For window reveals use a thin Eco-Liner board and apply drywall adhesive to the back of the board or wall to secure in place.

Typical U-values using Eco-Liner

Thickness (mm)	Typical U-values (W/m²K)	
	Existing cavity wall (dense block & brick)	Existing solid brick wall
52.5	0.39	0.40
62.5	0.33	0.34
72.5	0.29	0.30
82.5	0.25	0.26
92.5	0.23	0.23

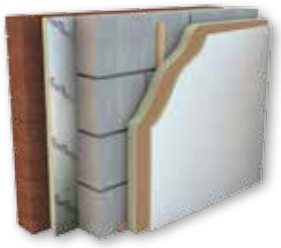
Calculations are based on outside surface resistance, wall as stated above, adhesive dabs, Eco-Liner, plaster skim, inside surface resistance.

The figures quoted above are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services or using EcoTherm's online U-value calculator at www.ecotherm.co.uk

Dot & dab adhesive application is suitable for: Brick, block or concrete solid walls or cavity walls with any friable material removed.

IDEAL FOR UPGRADING EXISTING WALLS

Internal Wall | Mechanically Fixed Application



INSTALLATION DETAILS

- Do not use Eco-Liner to hide or isolate damp or wet walls.
- If upgrading an existing wall, remove all fittings (skirting boards, rails, coving, radiators, socket facings etc) and ensure walls are clean, dry and free from protrusions. Strip gloss paint or vinyl wallpaper.
- Set out the positioning of Eco-Liner and cut boards to size if required, to fit floor to ceiling of the room. Allow 15mm off the floor to ceiling height. Consideration should be given to windows, sockets, doors, phone cables etc.
- Treated 25 x 50mm soft timber battens should be used to install the Eco-Liner boards.
- Fix DPC strips to the back of the timbers with staples prior to installation.
- Install timber battens to wall at a maximum of 600mm centres. Secure timbers in place using wood screws and wall plugs or nailable plugs. Fixings should penetrate a minimum of 45mm into the wall.
- Fix battens around all wall edges, openings and services.
- Timbers can be packed out to ensure a level surface.
- Come round the internal wall a minimum of 400mm.
- Place Eco-Liner board in position. The board must meet the centre lines of the timber battens.
- Secure Eco-Liner to the timber battens using drywall screws at 300mm centres and 200mm centres, around openings / external corners. The fixing should penetrate as least 25mm into the timber.
- Eco-Liner boards should be tightly butted and joints taped.
- Gaps between the board and floor can be filled with PU foam or a flexible acrylic sealant. For window reveals use a thin Eco-Liner board and apply drywall adhesive to the back or the board or wall to secure in place.

Typical U-values using Eco-Liner

Thickness (mm)	Typical U-values (W/m²K)	
	Existing cavity wall (dense block & brick)	Existing solid brick wall
52.5	0.38	0.40
62.5	0.32	0.34
72.5	0.28	0.29
82.5	0.25	0.26
92.5	0.22	0.23

Calculations are based on outside surface resistance, wall as stated above, timber battens, Eco-Liner, plaster skim, inside surface resistance.

Adjustments for fixings to be included once fixing centres / type have been confirmed.

The figures quoted above are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services or using EcoTherm's online U-value calculator at www.ecotherm.co.uk

Mechanically fixed application is suitable for: Stone, random rubble, brick, block or concrete solid walls or cavity walls with any friable material removed.

Timber Frame Wall

INSTALLATION DETAILS

Between timber studs – use Eco-Versal

- Measure the exact distance between studs to allow for variances and achieve tightly fitted insulation boards.
- Cut the insulation boards to required measurements (see Installation Essentials on page 13 for guidance on cutting).
- Install insulation board tightly between the studs, pushing the board back to the OSB/plywood sheathing.
- Fix treated soft timber stop battens inside the studs to prevent the boards moving within the cavity.
- Ensure boards edges are tightly butted and fill gaps with PU foam.
- Services can be installed in the cavity if required.
- If only installing insulation between studs a Vapour Control Layer (VCL) should be installed over the timber frame (warm side) and finished with plasterboard.

Between & inside timber frame – use Eco-Liner (insulated plasterboard)

Follow installation instructions above for insulation between studs.

- Install timber noggins where joints between Eco-Liner boards are unsupported.
- Fix Eco-Liner boards to the studs / noggins using drywall screws at 300mm centres, penetrating 25mm into the timber.
- Tape joints and use sealant around all perimeter abutments to maintain the VCL.

Typical U-values using Eco-Versal

Thickness (mm)	Typical U-values (W/m²K)	
	Between studs	Between & inside using 37.5mm Eco-Liner
50*	0.36	0.25
60*	0.33	0.24
65*	0.32	0.23
70*	0.31	0.22
75*	0.30	0.22
80**	0.27	0.20
90**	0.24	0.19
100**	0.22	0.18
120**	0.22	0.17
125**	0.22	0.16

Calculations are based on outside surface resistance, 102.5mm brick, 50mm cavity, breathable membrane, 9mm OSB, 100mm*/150**mm timber studs, plasterboard / Eco-Liner, plaster skim, inside surface resistance.

The figures quoted above are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services or using EcoTherm's online U-value calculator at www.ecotherm.co.uk

see page 32

BEST PRODUCT CHOICE

BETWEEN:
Eco-Versal

see page 32+34

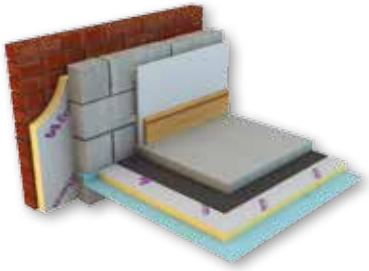
BETWEEN & INSIDE:
Eco-Versal & Eco-Liner (inside)

OTHER ECOTHERM PRODUCTS SUITABLE FOR **TIMBER FRAME WALL APPLICATION**

PrO-Versal between studs

see page **33** for more details

for Class O fire performance & an even thinner wall insulation solution

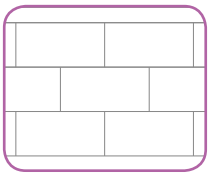


Solid Floor Below Slab

INSTALLATION DETAILS

- A thin sand blinding should be laid on top of well compacted hardcore to level site.
- Install a Damp Proof Membrane (DPM - min 300 micron / 1200 gauge polythene) lapping up the wall into the Damp Proof Course (DPC).
- Loose lay the insulation boards in a break bonded pattern (see below) with edges tightly butted.
- Where two layers of insulation are being installed ensure they are laid break bonded.
- Install a 25mm upstand of insulation on top of the loose laid boards up the wall. The upstand should follow around the perimeter of the floor to a height intended floor level.
- Overlay insulation boards with a minimum 500 gauge polythene sheet to act as a Vapour Control Layer (VCL) and to prevent cement penetrating board joints. Ensure the sheet is taped at joints with 150mm overlaps and turned up at upstands.
- Lay concrete to finished floor level and allow to dry completely before installing floor finish (approx. 1 day per mm of slab thickness).

TIGHT ON SPACE? USE PRO-VERSAL FOR A THINNER BOARD OPTION WHERE SPACE MATTERS MOST



Typical U-values using Eco-Versal

Thickness (mm)	Typical U-values (W/m^2K)
	Solid floor below slab
50	0.25
60	0.22
65	0.21
70	0.20
75	0.19
80	0.19
90	0.17
100	0.16
110	0.15
115	0.14
120	0.14
125	0.13
130	0.13
140	0.12
150	0.12
160	0.11
170	0.11
180	0.10
190	0.10
200	0.09

Calculations are based on outside surface resistance, damp proof membrane, PIR insulation, polythene sheet, 100mm concrete, 75mm screed, inside surface resistance.

Based on a P/A ratio of 0.5.

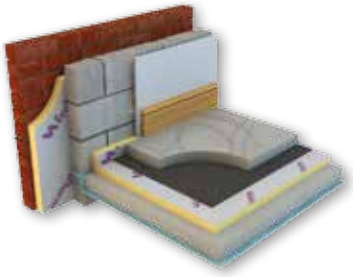
The figures quoted above are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services.

OTHER ECOTHERM PRODUCTS SUITABLE FOR
SOLID FLOOR BELOW SLAB APPLICATION

PrO-Versal
see page **33** for more details

Eco-UFH
see page **36** for more details

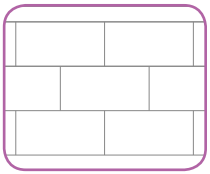
TIGHT ON SPACE? USE PRO-VERSAL FOR A THINNER BOARD OPTION WHERE SPACE MATTERS MOST



Solid Floor Above Slab

INSTALLATION DETAILS

- Ensure concrete slab is completely dry (approx. 1 day per mm of slab thickness).
- If a Damp Proof Membrane (DPM) has not been installed below the slab, install DPM above the slab (min 300 micron / 1200 gauge polythene) lapping into the Damp Proof Course (DPC).
- Level the surface with a thin sand blinding to continually support the insulation boards.
- Lay the insulation boards in a break bonded pattern (see below) with edges tightly butted.
- Where two layers of insulation are being installed ensure they are laid break bonded.
- Install a 25mm upstand of insulation on top of the loose laid boards up the wall. The upstand should follow around the perimeter of the floor to a height intended floor level.
- Overlay insulation boards with a minimum 500 gauge polythene sheet to act as a Vapour Control Layer (VCL) and to prevent wet screed penetrating board joints. Ensure the sheet is taped at joints with 150mm overlaps and turned up at upstands.
- Lay sand and cement screed on top of the VCL to a minimum thickness of 65mm for domestic applications (larger thicknesses may be required for higher floor loadings or non-domestic applications).
- Allow screed to dry completely before installing floor finish.



Typical U-values using Eco-Versal

Thickness (mm)	Typical U-values (W/m^2K)
	Solid floor above slab
50	0.25
60	0.22
65	0.21
70	0.20
75	0.19
80	0.19
90	0.17
100	0.16
110	0.15
115	0.14
120	0.14
125	0.13
130	0.13
140	0.12
150	0.12
160	0.11
170	0.11
180	0.10
190	0.10
200	0.09

Calculations are based on outside surface resistance, 100mm concrete, damp proof membrane, PIR insulation, polythene sheet, 75mm screed, inside surface resistance.

Based on a P/A ratio of 0.5.

The figures quoted above are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services

OTHER ECOTHERM PRODUCTS SUITABLE FOR
SOLID FLOOR ABOVE SLAB APPLICATION

PrO-Versal
see page **33** for more details

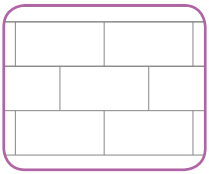
Eco-UFH
see page **36** for more details

TIGHT ON SPACE? USE PRO-VERSAL FOR A THINNER BOARD OPTION WHERE SPACE MATTERS MOST

Suspended Beam & Block Floor

INSTALLATION DETAILS

- Install a Damp Proof Membrane (DPM - min 300 micron / 1200 gauge polythene) lapping up the wall into the Damp Proof Course (DPC).
- The surface can be levelled using a thin sand blinding if required.
- Lay the insulation boards in a break bonded pattern (see below) with edges tightly butted.
- Where two layers of insulation are being installed ensure they are laid break bonded.
- Install a 25mm upstand of insulation on top of the loose laid boards up the wall. The upstand should follow around the perimeter of the floor to a height intended floor level.
- Overlay insulation boards with a minimum 500 gauge polythene sheet to act as a Vapour Control Layer (VCL) and to prevent wet screed penetrating board joints. Ensure the sheet is taped at joints with 150mm overlaps and turned up at upstands.
- Lay sand and cement screed on top of the VCL to a minimum thickness of 65mm for domestic applications (larger thicknesses may be required for higher floor loadings or non-domestic applications).
- Allow screed to dry completely before installing floor finish.



Typical U-values using Eco-Versal

Thickness (mm)	Typical U-values (W/m^2K)
	Suspended beam & block floor
50	0.27
60	0.24
65	0.23
70	0.21
75	0.20
80	0.20
90	0.18
100	0.17
110	0.15
115	0.15
120	0.14
125	0.14
130	0.14
140	0.13
150	0.12
160	0.11
170	0.11
180	0.10
190	0.10
200	0.10

Calculations based on outside surface resistance, 100mm dense block & beam, damp proof membrane, PIR insulation, polythene sheet, 75mm screed, inside surface resistance.

Based on a P/A ratio of 0.5.

The figures quoted above are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services.

OTHER ECOTHERM PRODUCTS SUITABLE FOR
SUSPENDED BEAM & BLOCK APPLICATION

PrO-Versal

see page **33** for more details

Eco-UFH

see page **36** for more details

TIGHT ON SPACE? USE PRO-VERSAL FOR A THINNER BOARD OPTION WHERE SPACE MATTERS MOST

Suspended Timber Floor

INSTALLATION DETAILS

From above - prior to the installation of floor boarding

- Measure the exact distance between joists to allow for variances and achieve tightly fitted insulation boards.
- Cut the insulation boards to required measurements (see Installation Essentials on page 13 for guidance on cutting).
- Install 25 x 25mm treated softwood timber battens or galvanised steel saddle clips inside the joists, at the correct height to support the insulation boards and ensure the boards sit flush with the top of the joists.
- Fit the insulation board tightly into the joists.
- Fill any gaps between joists and perimeter walls with either cut pieces of insulation board or PU foam.

From below - floor boards fixed over joists

- Measure the exact distance between joists to allow for variances and achieve tightly fitted insulation boards.
- Cut the insulation boards to required measurements (see Installation Essentials for guidance on cutting).
- Push the insulation board up between the joists, ensuring a tight fit and the boards sit flush with the floor boards.
- Install 25 x 25mm treated softwood timber battens or partially driven galvanised nails inside the joists, to support the insulation boards.
- Fill any gaps between joists and perimeter walls with either cut pieces of insulation board or PU foam.

Typical U-values using Eco-Versal

Thickness (mm)	Typical U-values (W/m^2K)
	Suspended timber floor
50*	0.26
60*	0.24
65*	0.23
70*	0.22
75*	0.21
80*	0.21
90*	0.20
100*	0.18
110*	0.18
115*	0.17
120*	0.17
125*	0.16
130*	0.16
140*	0.15
150*	0.15
160**	0.14
170**	0.13

Calculations are based on outside surface resistance, suspended void, *150mm/**200mm timber joists at 600mm centres, PIR insulation, 18mm chipboard, inside surface resistance.

Based on a P/A ratio of 0.5.

The figures quoted above are for guidance only. Detailed U–value calculations should be completed for each project by EcoTherm Technical Services.

OTHER ECOTHERM PRODUCTS SUITABLE FOR **SUSPENDED TIMBER FLOOR APPLICATION**

PrO-Versal
for an even thinner insulation solution

see page **33** for more details

Underfloor Heating (UFH)

INSTALLATION DETAILS

Concrete slab

- Ensure concrete slab is completely dry (drying time approx. 1 day per mm of slab thickness).
- If a Damp Proof Membrane (DPM) has not been installed below the slab, install DPM above the slab (min 300 micron / 1200 gauge polythene) lapping into the Damp Proof Course (DPC).
- Level the surface with a thin sand blinding to continually support the insulation boards.

Suspended block & beam

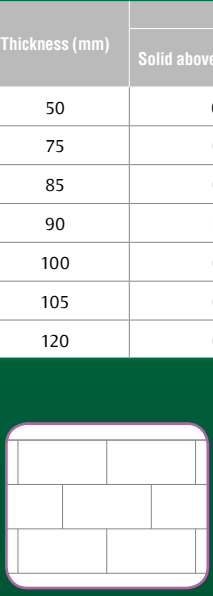
- Install a Damp Proof Membrane (DPM - min 300 micron / 1200 gauge polythene) lapping up the wall into the Damp Proof Course (DPC).
- The surface can be levelled using a thin sand blinding if required.

Installing Eco-UFH

- Lay Eco-UFH boards in a break bonded pattern (see right) with edges tightly butted.
- Where two layers of insulation are being installed, ensure they are laid break bonded.
- Install a 25mm upstand of insulation on top of the loose laid boards up the wall. The upstand should follow around the perimeter of the floor to a height intended floor level.
- A polythene sheet overlay is not required when using Eco-UFH, however EcoTherm do recommend taping board joints when using a liquid screed.
- Install the underfloor heating system in accordance with the manufacturers guidelines.
- Use the printed grid as a guideline for laying pipes.
- Pipe retaining clips can be inserted directly through the woven foil facing into the insulation core.
- Lay sand and cement screed on top of the boards and underfloor heating system to a minimum thickness of 65mm for domestic applications (larger thicknesses may be required for higher floor loadings or non-domestic applications).
- Allow screed to dry completely before installing floor finish.

Typical U-values using Eco-UFH

Thickness (mm)	Typical U-values (W/m²K)	
	Solid above concrete slab*	Suspended block & beam**
50	0.25	0.27
75	0.19	0.20
85	0.18	0.19
90	0.17	0.18
100	0.16	0.17
105	0.16	0.16
120	0.14	0.14



Calculations based on * outside surface resistance, 100mm concrete, damp proof membrane, PIR insulation, 75mm screed, inside surface resistance.

**outside surface resistance, 100mm dense block & beam, damp proof membrane, PIR insulation, polythene sheet, 75mm screed, inside surface resistance.

Based on a P/A ratio of 0.5.

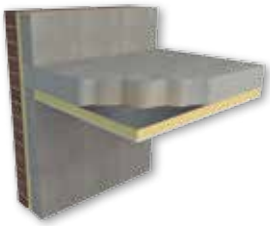
The figures quoted above are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services.

OTHER ECOTHERM PRODUCTS SUITABLE FOR
UNDERFLOOR HEATING APPLICATION

Eco-Versal
(with use of a min 500 gauge separating layer)

see page **32** for more details

PRO-SOFFIT PLUS INSULATES & PROVIDES A FINISH IN ONE BOARD



Semi-Exposed Soffit | Structural Ceiling

INSTALLATION DETAILS

General fixing instructions

- EcoTherm Insulation recommend a minimum of 12 mechanical fixings per board, however it is strongly recommended to seek project specific advice from a suitable fixing manufacturer.
- Insulation boards should be installed in a break bonded pattern (see below).
- Ensure the fixing device is long enough to give adequate penetration into either the framing or the concrete soffit. Fixings must be located 50-150mm from the edges and corners of the board and never overlap board joints. Consult fixing manufacturer for advice on appropriate fixing patterns.
- It is recommended that surface mounted services should be fixed back to the concrete soffit and not the surface building board.

Direct to concrete soffit

- Fix directly to soffit using proprietary non-combustible concrete fixings such as SPIT Isomet Insulation Anchors, Insofast Fixings or Ejot selftapping concrete anchors at 400mm centres, strictly in accordance with manufacturer's instructions.

Steel frame system

- Follow manufacturer guidelines when installing the steel frame system. Install insulation board at right angles to the framing using appropriate fixings at 600mm centres in the field of the board and at board ends ensuring a minimum 10mm penetration.

Timber frame system

- Mechanically fix to 75 x 50mm pre-treated timber framing at 600mm centres in the field of the board and at board ends. Install insulation board at right angles to the framing using appropriate fixings ensuring a minimum 25mm penetration.

Typical U-values using PrO-Soffit Plus

Thickness (mm)*	Typical U-values (W/m^2K)
	Semi-exposed concrete ceiling
78	0.27
88	0.24
98	0.22
108	0.20
118	0.18
128	0.17
138**	0.15
148**	0.14

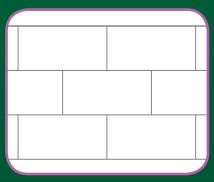
*insulation core + 8mm calcium silicate building board.

** requirements for larger thicknesses can be fulfilled with two layers of insulation boards.

Calculations are based on outside surface resistance, fasteners, 8mm calcium silicate board, PIR insulation, 150mm concrete slab ceiling.

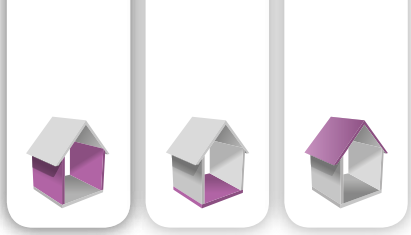
Adjustments for fixings to be included once fixing centres / type have been confirmed.

The figures quoted above are for guidance only. Detailed U-value calculations should be completed for each project by EcoTherm Technical Services.

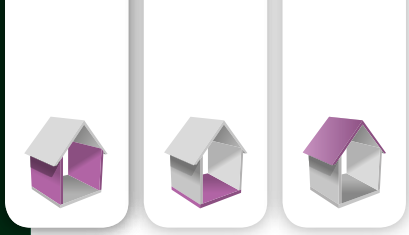


OTHER ECOTHERM PRODUCTS SUITABLE FOR **SEMI-EXPOSED SOFFIT APPLICATION**

PrO-Soffit see page **37** for more details



EcoTherm and the Environment



Eco-Versal

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

Application
Eco-Versal is a universal insulation board suitable for use in:

PITCHED ROOFS
- Over rafters
- Over and between rafters
- Between rafters only
- Between and under rafters
- To create a room in the roof
- Loft floors
- Ceilings and dormer cheeks

WALLS
- Internal walls
- Timber frame walls
- Upgrading cavity walls internally

FLOORS
- Solid concrete floors (above and below slab)
- Block and beam floors
- Suspended timber floors
- Under floor heating systems

Benefits
- Non irritant, rigid boards are easy to cut and fit between rafters / studs.
- Will not rot, sag or decay – no need to replace.
- Lightweight boards will not weigh structure down.
- Out performs traditional insulants by 50% - you need approximately half the thickness.
- Universal board can be used in a number of applications – reduced waste.

Board size:
2400 x 1200mm (2.88m^2)

Thicknesses available:
25 – 200mm

Thermal conductivity (lambda value):
0.022W/mK

Compressive strength:
Typically exceeds 140 kPa at 10% compression when tested to BS EN 826: 1996 (Thermal insulating products for building applications. Determination of compression behaviour).

Fire performance:
Eco-Versal achieves BS476-7: 1997 Class 1 rating for surface spread of flame. Further details on the fire performance may be obtained from EcoTherm Technical Services.

Typical weight:

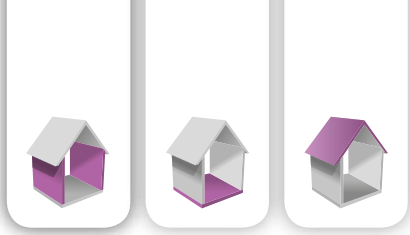
Thickness (mm)	Weight per board (kg)
25	3.4
30	3.8
40	4.8
50	5.6
60	6.5
70	7.4
80	8.3
90	9.2
100	10.1
110	10.9
120	11.8
130	12.7
140	13.6
150	14.5
160	15.4
170	16.3
180	17.2
190	18.1
200	19.0

energy saving trust listed

Fibre-free Core

VISIT WWW.ECOTHERM.CO.UK

to download the Eco-Versal technical datasheet, product safety information or order a sample



PrO-Versal

Description

EcoTherm PrO-Versal comprises a fibre free rigid polyisocyanurate (PIR) insulation core faced with a pure aluminium foil facing on both sides. PrO-Versal boards are part of EcoTherm's enhanced performance range with an improved thermal performance and Class O fire performance providing an even thinner solution when compared to standard PIR insulation.

Application

PrO-Versal is an enhanced universal insulation board suitable for use in:

PITCHED ROOFS

- Over rafters
- Over and between rafters
- Between rafters only
- Between and under rafters
- To create a room in the roof
- Loft floors
- Ceilings and dormer cheeks

WALLS

- Internal solid walls
- Timber frame walls
- Upgrading cavity walls internally

FLOORS

- Solid concrete floors (above and below slab)
- Block and beam floors
- Suspended timber floors
- Under floor heating systems

Benefits

- Class O fire performance.
- Lower lambda value of 0.021W/mK means even less thickness is required than standard PIR insulation – save space where it matters most.
- Rigid, lightweight boards are easy to cut, transport and install.

Board size:

2400 x 1200mm (2.88m^2)

Thicknesses available:

25 – 120mm

Thermal conductivity (lambda value):

0.021W/mK

Compressive strength:

Typically exceeds 140 kPa at 10% compression when tested to BS EN 826: 1996 (Thermal insulating products for building applications. Determination of compression behaviour).

Fire performance:

EcoTherm PrO-Versal is classified as a Class O fire performance product in accordance with UK Building Regulations. Further details on the fire performance may be obtained from EcoTherm Technical Services.

Typical weight:

Thickness (mm)	Weight per board (kg)
25	2.9
30	3.4
40	4.3
50	5.1
60	6.0
70	6.9
80	7.7
90	8.6
100	9.4
110	10.3
120	11.2

Fibre-free Core

VISIT
WWW.ECOTHERM.CO.UK

to download the PrO-Versal technical datasheet, product safety information or order a sample

Eco-Liner

Description
EcoTherm Eco-Liner comprises a fibre free rigid polyisocyanurate (PIR) insulation core bonded to 12.5mm tapered edge gypsum plasterboard using proprietary gypsum adhesive.

Application
Eco-Liner is suitable for insulating and dry lining:

- Internal walls;
- Pitched roofs below rafters;
- Cold flat roofs; and
- Room in the roof applications.

Eco-Liner is suitable for both adhesive dot and dab application or mechanically fixed systems and is ideal for refurbishing existing walls to a higher thermal performance.

Benefits
- Dry line and insulates in one application.
- 1 Board, 2 different application methods available.
- Offers excellent thermal resistance in practical thicknesses - saving space internally.
- Will not rot, sag or decay.

Board size:
2400 x 1200mm (2.88m^2)

Thicknesses available:
37.5 - 112.5mm (insulation + plasterboard)

Thermal conductivity (lambda value):
Insulation core: 0.022W/mK
Plasterboard: 0.19W/mK

Fire performance:
The plasterboard component is Class 0 or 'low risk' in accordance with BS 476-6: 1989 and BS 476-7: 1997. Further details on the fire performance may be obtained from EcoTherm Technical Services.

Typical weight:*

Thickness (mm)	Weight per board (kg)
37.5	27
42.5	27.4
52.5	28.3
62.5	29.2
72.5	30.1
82.5	31
92.5	31.9
102.5	32.8
112.5	33.7

* including 12.5mm plasterboard

energy saving trust listed

Fibre-free Core

VISIT WWW.ECOTHERM.CO.UK

to download the Eco-Liner technical datasheet, product safety information or order a sample

Eco-Cavity

Description
EcoTherm Eco-Cavity comprises a fibre free rigid polyisocyanurate (PIR) insulation core faced with an aluminium foil composite on both sides.

Application
Eco-Cavity is suitable for use within partial fill cavity walls. Eco-Cavity achieves high levels of thermal performance for thinner constructions whilst maintaining a clear residual air gap; effective protection against driving rain, particularly in coastal and exposed locations.

Benefits
- Boards are specifically designed to combine accurately with standard sized bricks/blocks.
- Enables easy installation of wall ties.
- Will not rot, sag or decay within the cavity wall.
- Out performs traditional insulants by 50% - you need approximately half the thickness.

Board size:
1200 x 450mm (0.54m^2)

Thicknesses available:
25 – 100mm

Thermal conductivity (lambda value):
0.022W/mK

Fire performance:
Eco-Cavity achieves BS476-7: 1997 Class 1 rating for surface spread of flame. Further details on the fire performance may be obtained from EcoTherm Technical Services.

Typical weight:

Thickness (mm)	Weight per board (kg)
25	0.6
30	0.7
40	0.9
50	1.0
60	1.2
70	1.4
80	1.6
90	1.7
100	1.9

TONGUE & GROOVED ECO-CAVITY AVAILABLE, CONTACT ECOTHERM TECHNICAL SERVICES TO FIND OUT MORE

energy saving trust listed

Fibre-free Core

VISIT WWW.ECOTHERM.CO.UK

to download the Eco-Cavity technical datasheet, product safety information or order a sample

Eco-UFH

Description
EcoTherm Eco-UFH comprises a fibre free rigid polyisocyanurate (PIR) insulation core faced with a tough woven aluminium foil composite with printed grid on both sides.

Application
Suitable for use in conjunction with screeded underfloor heating systems for new build or upgrading the thermal performance of existing floors. Easy to lay and provides a fast and secure method of installing underfloor heating water pipes. Eco-UFH has a protected, supported aluminium foil on both sides and printed with a grid to assist with the layout of underfloor heating systems with no requirement for a polythene overlay.

Benefits
- Printed grid makes it easier to align underfloor heating pipes accurately and quickly.
- Superior clip retention within the woven facing.
- Excellent thermal performance means minimal thickness.
- No need for additional polythene sheet before screeding.

Board size:
2400 x 1200mm (2.88m^2)

Thicknesses available:
25 –100mm

Thermal conductivity (lambda value):
0.022W/mK

Compressive strength:
Typically exceeds 150 kPa at 10% compression when tested to BS EN 826: 1996 (Thermal insulating products for building applications. Determination of compression behaviour).

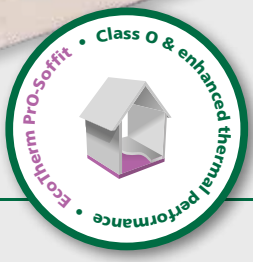
Fire performance:
Eco-UFH achieves BS476-7: 1997 Class 1 rating for surface spread of flame. Further details on the fire performance may be obtained from EcoTherm Technical Services.

Typical weight:

Thickness (mm)	Weight per board (kg)
25	3.4
30	3.8
40	4.8
50	5.6
60	6.5
70	7.4
80	8.3
90	9.2
100	10.1

Fibre-free Core

VISIT
WWW.ECOTHERM.CO.UK
to download the Eco-UFH technical datasheet, product safety information or order a sample



PrO-Soffit

Description

EcoTherm PrO-Soffit comprises a fibre free rigid polyisocyanurate (PIR) insulation core faced with a pure aluminium foil facing on both sides. PrO-Soffit boards are part of EcoTherm's enhanced performance range with an improved thermal performance and Class O fire performance providing an even thinner solution when compared to standard PIR insulation.

Application

Suitable for use in new build or for upgrading the thermal performance of existing semi-exposed soffits (structural ceilings i.e. car-parks, office or residential blocks and also basements).

Benefits

- Class O fire performance.
- Lower lambda value of 0.021W/mK means even less thickness is required than standard PIR insulation.
- Rigid, lightweight boards are easy to cut, transport and install.

Board size:

2400 x 1200mm (0.54m^2)

Thicknesses available:

25 – 120mm

Thermal conductivity (lambda value):

0.021W/mK

Compressive strength:

Typically exceeds 140 kPa at 10% compression when tested to BS EN 826: 1996 (Thermal insulating products for building applications. Determination of compression behaviour).

Fire performance:

EcoTherm PrO-Soffit is classified as a Class O fire performance product in accordance with UK Building Regulations. Further details on the fire performance may be obtained from EcoTherm Technical Services.

Typical weight:

Thickness (mm)	Weight per board (kg)
25	2.9
30	3.4
40	4.3
50	5.1
60	6.0
70	6.9
80	7.7
90	8.6
100	9.4
110	10.3
120	11.2

Fibre-free Core

VISIT WWW.ECOTHERM.CO.UK

to download the PrO-Soffit technical datasheet, product safety information or order a sample

PrO-Soffit Plus

CLASS O

λ0.021

EcoTherm PrO-Soffit Plus • Insulate and finish in 1 •

Description

EcoTherm PrO-Soffit Plus comprises a building board bonded to a fibre free rigid polyisocyanurate (PIR) insulation core faced with a pure aluminium foil facing. A range of facing options are available to suit project requirements in the form of the following non-combustible, Class O fire performance building boards:

- Calcium silicate (CS)
- Magnesium silicate (MS)
- Glass reinforced gypsum (GRG)

PrO-Soffit Plus boards are part of EcoTherm's enhanced performance range with an improved thermal performance and Class O fire performance providing an even thinner solution when compared to standard PIR insulation.

Application

Suitable for use in new build or for upgrading the thermal performance of existing semi-exposed soffits (structural ceilings i.e. car-parks, office or residential blocks and also basements). PrO-Soffit Plus provides a finished effect to the structural ceiling.

Benefits

- Insulates and finishes in one application.
- Class O fire performance.
- Lower lambda value of 0.021W/mK means even less thickness is required than standard PIR insulation.

Board size:

2400 x 1200mm (2.88m^2)

Thicknesses available:

68 – 128mm

Thermal conductivity (lambda value):

Insulation core: 0.021W/mK
Building board: 0.16 W/mK

Compressive strength:

Typically exceeds 140 kPa at 10% compression when tested to BS EN 826: 1996 (Thermal insulating products for building applications. Determination of compression behaviour).

Fire performance:

EcoTherm PrO-Soffit Plus is classified as a Class O fire performance product in accordance with UK Building Regulations. Further details on the fire performance may be obtained from EcoTherm Technical Services.

Typical weight:*

Thickness (mm)	Weight per board (kg)
68	26.4
78	27.3
88	28.2
98	29.0
108	29.9
118	30.8
128	31.6

* including 8mm calcium silicate building board

Fibre-free Core

PRO-SOFFIT PLUS CAN BE TAILORED TO SUIT THE DEMANDS OF INDIVIDUAL PROJECTS. CONTACT THE ECOTHERM TECHNICAL SERVICES TEAM IF YOUR REQUIREMENT IS NOT DETAILED ABOVE

VISIT
WWW.ECOTHERM.CO.UK

to download the PrO-Soffit Plus technical datasheet, product safety information or order a sample

WHATEVER YOUR REQUIREMENT, **WE HAVE IT COVERED...**

EcoTherm Insulation prides itself on providing fuss free technical advice. EcoTherm Technical Services is a friendly team that provide a prompt, unrivalled, free of charge service answering the most basic questions to complicated in-depth queries. It is EcoTherm's aim to provide simple to understand, plain English advice on anything from specification to installation including:

- U-value calculations to show compliance with current building regulations in floors, walls and roofs (both flat and pitched);
- Condensation Risk Analysis;
- advice on product selection and product data for all EcoTherm Insulation products;
- general application, installation and fixing methods on all applications;
- specification advice;
- impartial product advice on associated products and proposed system elements;
- full site surveys can be completed for tapered roof projects with EcoTherm's partner Building Innovation; and
- technical samples for compatibility testing.

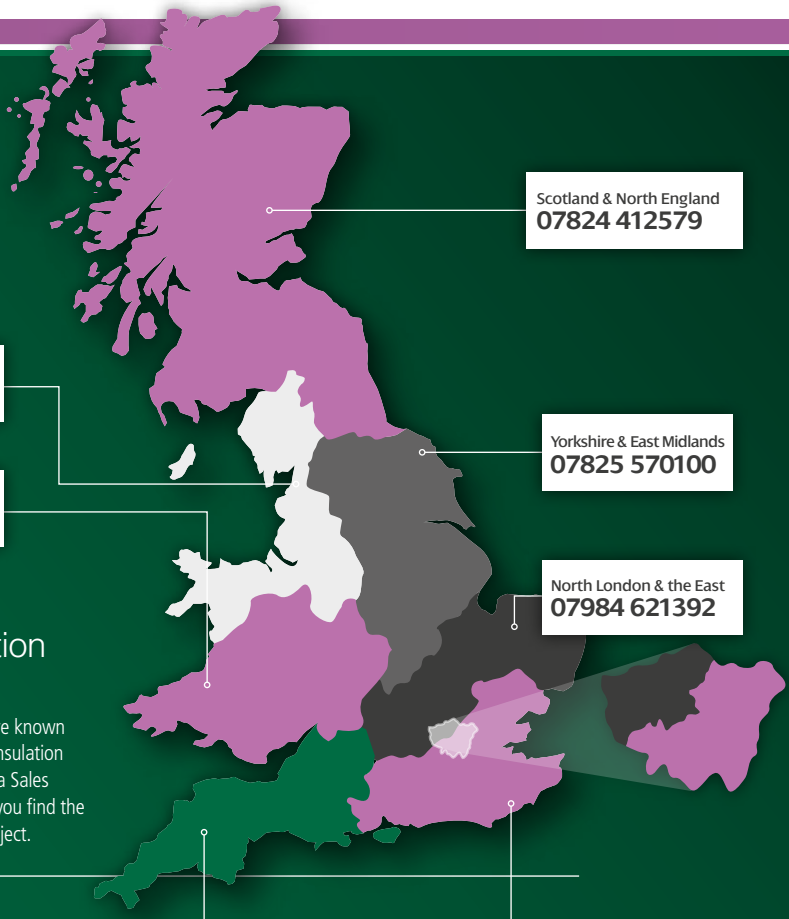
EcoTherm's Technical Services department is open **Monday - Friday 8.30am - 5.00pm**

Tel: +44 (0)1268 597 212 / 213
Fax: +44 (0)1702 420 636
Email: technical@ecotherm.co.uk

REQUIRE OUT OF HOURS ASSISTANCE?

EcoTherm's online product selector and U-value calculator provides a simple step by step service to identifying which EcoTherm product you require and what thickness –
24 hours a day, 7 days a week.

EcoTherm®
Insulation



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07824 412579

North West & North Wales
07931 342948

Yorkshire & East Midlands
07825 570100

South Wales & West Midlands
07940 546247

North London & the East
07984 621392

EcoTherm Insulation UK Sales Team

EcoTherm's National Sales Team are known for their superb construction and insulation industry knowledge. Give your Area Sales Manager a call and they will help you find the best stockist and price for your project.

South West
07879 495283

South London & the South East
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EcoTherm Insulation (UK) Ltd is registered in England No. 1873816

JULY 2015