FOR FLAT ROOFS

FOR FREE TECHNICAL ADVICE
Call: 01268 597 212/213
Email: technical@ecotherm.co.uk

Site work

HANDLING

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

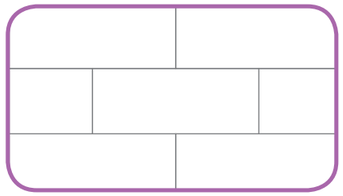
Cutting with power tools generates dust so should be kept to a minimum. Ideally all operations which produce dust should be carried out in well ventilated conditions; where possible a dust mask selected in accordance with BS EN 149 should be worn.

Ensure accurate trimming to achieve close butt joints and continuity of insulation, particularly around projections through the roof. Whenever work is interrupted, a night joint must be made to prevent water penetration.

HEALTH & SAFETY

This PIR product is chemically inert and safe to use, product safety information is available to download from www.ecotherm.co.uk

LAYING PATTERN



STORAGE

At no time should the insulation boards be left exposed to rain. Whenever work is interrupted, a night joint must be made to prevent water penetration. Packs are stretch wrapped in recyclable polythene. Store boards in a flat, dry area off the ground away from mechanical damage and sources of ignition. Boards should be completely covered with weatherproof sheeting. The boards must be kept dry at all times.

The boards must be protected from prolonged exposure to sunlight and should be stored either under cover or covered with opaque polyethylene sheets.

TYPICAL FIXING INSTRUCTIONS

The board should be laid so that each long edge coincides with the centre of a joist. Noggins should be used to support all edges of EcoTherm Eco-Deck which are not fully supported by the joists and at points where the board is cut to fit openings etc.

EcoTherm Eco-Deck should be fixed to joists set at a maximum of 600mm centres, with the timber side uppermost and the board laid with the long edge running along the joist. Where an overall vapour control layer is required, this should be achieved by applying a continuous bead of mastic (i.e. Neutral curing silicone sealant) to the upper surface of all supporting timber. EcoTherm Eco-Deck should be laid onto the mastic and fixed with round-headed screws, spaced at 300mm centres down the line of each joist and / or noggin.

The screws should be long enough to allow a minimum 35mm penetration of the supporting timber and be positioned not less than 10mm from the edge of the board or 50mm from the corner. Where two EcoTherm Eco-Deck panels are fixed to the same joist or noggin, the fixing centres should be staggered. The EcoTherm Eco-Deck should be lightly butted and all edges must be supported by a minimum of 20mm bearing onto the face of the supporting timber.

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FOR FLAT ROOFS

EcoTherm® Insulation

Eco-Deck

Insulated decking for flat roofs

Polyisocyanurate (PIR) thermal insulation tough, structural, pre-insulated roof decking

Eco-Deck

Fibre-free Core

Applications

Used for new-build and for upgrading the thermal performance of existing roofs. It provides a cost effective means of reducing CO_2 emissions and for compliance with Building Regulations/Standards. Eco-Deck achieves high performance insulation for warm flat roof structures. EcoTherm Eco-Deck is suitable for use with mechanically fixed single-ply waterproofing membranes, mastic asphalt, torch on, roll & pour and adhered systems.

Description

EcoTherm Eco-Deck is polyisocyanurate (PIR) insulation faced with tough, exterior grade, Grade 3 OSB or exterior grade plywood used as pre-insulated foil-backed thermal insulating decking for flat roofs. It is ready to fix and finish using basic tools and traditional roofing techniques.

Product properties

DIMENSIONS

Available in standard sizes and various thicknesses as shown below:

Width: 1200mm
Length: 2400mm

Thickness
Insulation core: 50 - 150mm
OSB: 9mm
Plywood: 6mm
Weight: See table 1 for board weights

DURABILITY

The product is stable, rot proof and durable and will remain effective as an insulation system at least as long as that of the waterproof covering. Durability depends on the method of application, the supporting structure and conditions of use.

The fibre free insulation core and facings resist attack by mould and microbial growth, and do not provide any food value to vermin.

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).

MOISTURE TOLERANCE

Tough exterior grade OSB Grade 3 and plywood have inherent moisture resistant qualities.

RESISTANCE TO SOLVENTS

EcoTherm Eco-Deck's fibre free insulation core resists attack from alkalis, dilute acids, mineral oil and petrol. The insulation core is not resistant to ketonic solvents. Boards which have been in contact with harsh solvents, petrol, mineral oil or acids or damaged boards should not be used.

THERMAL CONDUCTIVITY

The low emissivity of the reflective foil can cut radiation heat transfer across an adjoining air-space.

The thermal conductivity (λ-value) of the insulation is 0.022 W/mK.

The thermal conductivity (λ-value) of the OSB is 0.125 W/mK. The thermal conductivity (λ-value) of the plywood is 0.125 W/mK.

Thermal resistances of the range within given constructions are shown in table 1. EcoTherm PIR insulation lambda and thermal resistance values stated in this datasheet are in accordance with BS EN 13165: 2012 Thermal insulation products for buildings – Factory made rigid polyurethane foam products – Specification.

WATER VAPOUR RESISTANCE

Foil facings have a high water vapour resistance and will, therefore, provide significant resistance to water vapour transmission.

The necessity for the inclusion of a vapour control layer in the roof construction should be assessed in accordance with BS 6229: 2003 Code of Practice for flat roofs with continuously supported coverings.

Consideration should also be given to BS5250: 2002 Code of Practice for control of condensation in buildings.

Design considerations

ENVIRONMENTAL

EcoTherm insulation is manufactured with a blowing agent that is CFC/HCFC free and has zero Ozone Depletion Potential (ODP) with a low Global Warming Potential (GWP). Eco-Deck corresponds to the BRE Global Green Guide generic specification which achieves a summary rating of A. Eco-Deck with a certified BRE Global Green Guide rating of A+ is available subject to enquiry.

EcoTherm Insulation is manufactured under an ISO 14001 Environmental Management System (LPCB certificate - 388 - 7EMS).

FIRE

The fire rating of any roof containing the boards will depend heavily on the type of deck and the nature of the roof waterproof covering. The designation of the roof covering must meet or satisfy the requirements of the national Building Regulations.

Finished with 3 layer built-up felt and chippings, the roof will attain an FAA rating when tested to BS 476: 1988 External Fire Exposure Test. Further details on the fire performance may be obtained from EcoTherm Technical Services.

The fibre free insulation core achieves BS476-7: 1997 Class 1 rating for surface spread of flame.

Table 1

Insulation Thickness (mm)	Weight per board with 9mm OSB (kg)	Weight per board with 6mm plywood (kg)	R-value (m^2K/W)	Typical U-values (W/m^2K)
90	26.6	20.2	4.16	0.22
100	27.5	21.1	4.62	0.20
110	28.4	22.0	5.07	0.18
120	29.3	22.9	5.53	0.17
130	30.2	23.8	5.98	0.16
140	31.1	24.7	6.44	0.15
150	31.9	25.5	6.89	0.14

The U-values quoted above are for guidance only. Detailed U-value calculations should be complete for each project by EcoTherm Technical Services. For instant U-value calculations 24/7 visit EcoTherm's online U-value calculator at www.ecotherm.co.uk

ROOF LOADING

Depending on the chosen waterproofing system, Eco-Deck is suitable for use on roof decks that are subject to limited maintenance foot traffic. Walkways should be provided on roofs requiring regular pedestrian access.

The roof should be boarded out with protective boarding whenever site work is to take place after the roof board has been laid and the roof made watertight.

ROOF WATERPROOFING SYSTEM

Eco-Deck is suitable for use with most single ply and bitumen based felt waterproofing systems.

In the event of any doubt, please contact EcoTherm Technical Services to check compatibility of the proprietary system.

STANDARDS AND APPROVALS

Consideration should be given to BS 5250: 2002 Code of Practice for control of condensation in buildings and BS 6229: 2003 Code of Practice for flat roofs with continuously supported coverings.

Eco-Deck is covered by BBA Agrément Certificate No 07/4487.

EcoTherm Insulation is manufactured under an ISO 9001 Quality Management System (LPCB certificate 388 – 7QMS), ISO 14001 Environmental Management System (LPCB certificate - 388 – 7EMS) and BS OHSAS 18001 Occupational Health and Safety Management System (LPCB certificate 388 – 7HS). All certificates are available for download from www.ecotherm.co.uk

All EcoTherm insulation products have a CE Declaration of Performance available for download from www.ecotherm.co.uk

TYPICAL U-VALUES

EcoTherm Eco-Deck gives typical U-values as shown in table 1.

Project specific U-value calculations and condensation risk calculations are available from EcoTherm Technical Services on request.

WIND LOADING

Wind loadings should be assessed in accordance to BS EN 1991-1-4:2005 + A1:2010 Eurocode 1, Actions on structures, General Actions, Wind Actions and the UK National Annex. EcoTherm recommend contacting the waterproofing manufacturer for a project specific wind uplift calculation.

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