



FOR FREE TECHNICAL ADVICE  
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**TYPICAL FIXING INSTRUCTIONS**

EcoTherm Eco-Cavity lining board is held in position by the wall ties used to tie the two skins of masonry, with additional washers. Where the inner skin of masonry is monolithic, and it is not possible to use such fasteners, the boards may be fixed by a minimum of 4 screws incorporating a large 50mm minimum diameter plastic, galvanised, or stainless steel washer. The screws should be screwed directly into the masonry skin behind the board. The number of mechanical fixings required will vary with the size of the board used. Regardless of the method of fixing and type of construction, EcoTherm board should be evenly supported so that it will remain flat against the inner skin of masonry.

The boards should always be installed with staggered joints.

For buildings up to 12m high, a minimum clear cavity width of 25mm free from all obstructions may be acceptable subject to exposure.

**HANDLING**

- Do not drop boards
- To cut use a sharp knife or fine tooth 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.

**HEALTH & SAFETY**

This PIR product is chemically inert and safe to use, COSHH information is available to download from [www.ecotherm.co.uk](http://www.ecotherm.co.uk)

**STORAGE**

At no time should the insulation boards be left exposed to rain. 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.

Table 1

Thickness (mm)	Length (mm)	Width (mm)	Weight per board (kg)	R-value (m <sup>2</sup> k/W)	Typical U-value Brick & light block (W/m <sup>2</sup> K)	Typical U-value Brick & medium block (W/m <sup>2</sup> K)	Typical U-value Brick & dense block (W/m <sup>2</sup> K)
25	1200	450	0.6	1.14	0.34	0.41	0.43
30	1200	450	0.7	1.36	0.31	0.37	0.39
35	1200	450	0.8	1.59	0.29	0.35	0.36
40	1200	450	0.9	1.82	0.27	0.32	0.33
45	1200	450	1.0	2.05	0.26	0.30	0.31
50	1200	450	1.1	2.27	0.24	0.28	0.29
55	1200	450	1.1	2.50	0.23	0.26	0.27
60	1200	450	1.2	2.73	0.22	0.25	0.25
70	1200	450	1.4	3.18	0.20	0.22	0.23
75	1200	450	1.5	3.41	0.19	0.21	0.22
100	1200	450	1.9	4.55	0.16	0.17	0.17

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](http://www.ecotherm.co.uk)

105 - 200mm Call for information

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Please consult EcoTherm for details of BBA certificate numbers for specific products  
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# Eco-Cavity



Partial fill cavity wall insulation



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



### Applications

Used for new build and for upgrading the thermal performance of existing cavity walls, providing a cost effective means of reducing CO<sub>2</sub> emissions and for compliance with Building Regulations/Standards. Eco-Cavity achieves high performance insulation whilst maintaining a clear residual cavity; effective protection against driving rain, particularly in coastal and exposed locations.

### Description

Eco-Cavity comprises a fibre free rigid polyisocyanurate (PIR) insulation core with aluminium foil composite facing on both sides. It is a high performance insulation used as a partial cavity fill within traditionally built masonry walls. It is conveniently sized so that the boards co-ordinate with brick and block dimensions and to allow the insertion of wall ties into the construction at the appropriate spacing.



### Product properties

#### DIMENSIONS

Available in standard sizes and various thicknesses as shown below:

**Width:** 450mm

**Length:** 1200mm

**Thickness:** 25 to 100mm

**Weight:** See table 1 for board weights

#### COMPRESSIVE STRENGTH

Typical compressive strength for the insulation exceeds 140kPa when tested to BS EN 826: 1996 Thermal Insulating Products for Building Applications-Determination of Compressive Behaviour.

#### DURABILITY

The product is stable, rot proof and durable and will remain effective as an insulation system for the life of the building. Durability depends on the method of application, the supporting structure and conditions of use. The fibre free insulation core and facings resist attack from mould and microbial growth and do not provide any food value for vermin.

#### RESISTANCE TO SOLVENTS

PIR insulation resists attack from alkalis, dilute acids, mineral oil and petrol. The fibre free insulation core is not resistant to ketonic solvents. Damaged boards should not be used.

#### THERMAL CONDUCTIVITY

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

The thermal conductivity (lambda/λ-value) of the board is 0.022 W/mK and the 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

The board has a water vapour resistance of > 100MNs/g and will therefore, provide significant resistance to water vapour transmission.

The use of EcoTherm Eco-Liner (insulated plasterboard) on the internal wall should be considered to achieve low target U-values in a wall construction.



### 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-Cavity corresponds to the BRE Global Green Guide generic specification which achieves a summary rating of A. Eco-Cavity 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).

Eco-Cavity is approved as an Energy Savings Trust (EST) Listed product.

#### FIRE

The product does not prejudice the fire resistance properties of the wall. It is unlikely to become ignited within the cavity when used in context. If the fire does penetrate into an unventilated cavity, the amount of air present will be insufficient to support combustion, and flame spread will be minimal.

Further details on the fire performance may be obtained from EcoTherm Technical Services.

Eco-Cavity achieves BS476-7: 1997 Class 1 rating for surface spread of flame.

Cavity barriers: The requirements relating to fire spread in cavity barriers can be met in buildings of all purpose groups without the need for cavity barriers provided the construction complies with the provisions detailed in Approved Documents.

#### MOISTURE TOLERANCE

When the product is used in situations where it bridges the dpc in walls, dampness from the ground will not pass through to the inner leaf provided the cavity wall is detailed in accordance with Building Regulations/Standards.

#### SPECIFICATION CLAUSE

The Insulation shall be EcoTherm Eco-Cavity \_\_\_ mm thick – Fibre free rigid polyisocyanurate (PIR) insulation core with low emissivity aluminium foil composite facings to both sides.

It shall be manufactured in accordance to Quality Management System ISO 9001: 2008, Environmental Management System ISO 14001: 2004 and Occupational Health & Safety Management System BS OHSAS 18001: 2007.

#### STANDARDS AND APPROVALS

Eco-Cavity is covered by BBA Agrément Certificate No 98/3552.



The NHBC accepts the use of EcoTherm Eco-Cavity in relation to relevant clauses in NHBC standards. 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](http://www.ecotherm.co.uk)

All EcoTherm insulation products have a CE Declaration of Performance available for download from [www.ecotherm.co.uk](http://www.ecotherm.co.uk)

#### TYPICAL U-VALUES

EcoTherm Eco-Cavity gives typical insulation values as shown in table 1.

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

For instant U-value calculations 24/7 visit EcoTherm's online U-value calculator at [www.ecotherm.co.uk](http://www.ecotherm.co.uk)

#### DESIGN CONSIDERATIONS

Eco-Cavity will avoid problems associated with completely filled cavities. BS 5628: 2005 (Code of Practice for the structural use of masonry Part 1 structural use of unreinforced masonry, Part 2 structural use of reinforced and pre-stressed masonry), should be consulted specifically in severe exposure zones. The wall ties used should conform to BS EN 845-1: 2003 (Specification for ancillary components for masonry ties, tension straps, hangers and brackets).

