FOR WALLS

EcoTherm Insulation

Eco-Cavity

Eco-Cavity • Walls • Eco-Cavity • Walls

Partial fill cavity wall insulation

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

energy saving trust listed

Eco-Cavity

Description

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

Application

Eco-Cavity is suitable for use within partial fill cavity walls providing a cost effective means of reducing CO_2 emissions and compliance with Building Regulations / Standards. 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.

Product properties

DIMENSIONS

Available in standard sizes and various thicknesses as shown below:

Width: 450mm
Length: 1200mm
Thickness: 40mm to 100mm
Weight: See Table 1 for board weights

COMPRESSIVE STRENGTH

Typical compressive strength for the insulation exceeds 140kPa when tested at 10% compression to BS EN 826:2013 Thermal Insulating Products for Building Applications-Determination of Compressive Behaviour.

DURABILITY

The product is stable, rot proof and durable and when correctly installed has an indefinite life. Durability depends on the method of application, the supporting structure and conditions of use. It should not be used to isolate dampness nor be used in continuously damp/humid conditions. 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 + A2: 2016 (Thermal insulation products for buildings. Factory made rigid polyurethane foam (PU) products. Specification).

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. Alternatively EcoTherm Eco-Cavity Full Fill can be used solely to achieve a U-value as low as 0.13 W/mK.

WATER VAPOUR RESISTANCE

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

Fibre-free Core

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).

The BRE has assigned Eco-Cavity a 2008 Green Guide rating of A+.

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 PERFORMANCE
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 BS 476-7:1997 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 14//5157.

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

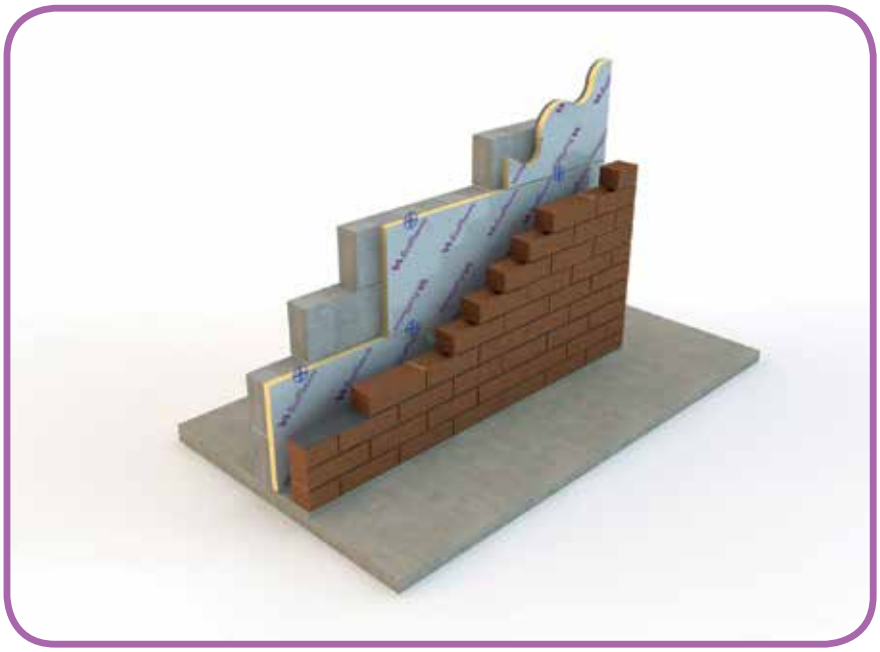
All EcoTherm insulation products have a CE Declaration of Performance available for download from www.ecotherm.co.uk

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

DESIGN STANDARDS
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 845-1:2013+A1:2016 (Specification for ancillary components for masonry ties, tension straps, hangers and brackets).



FOR FREE TECHNICAL ADVICE
Call: 01268 597 213
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Site work

TYPICAL FIXING INSTRUCTIONS

Wall ties should include a retaining clip / disc to ensure insulation boards are held in place. Seek advice from wall tie manufacturer for the most suitable tie for the construction. Ensure each Eco-Cavity board is secured with a minimum of 3 wall ties. Additional ties may be required to meet BS EN 845-1:2013 + A1:2016, BS EN 1996-1-1:2005 + A1:2012, BS EN 1996-2:2006, BS EN 1996-3:2006 and/or PD 6697:2010.

The boards should always be installed with staggered joints. No requirement to tape the joints of the boards, provided they are fitted correctly.

For buildings up to 12m high, a minimum clear cavity width of 25mm free from all obstructions may be acceptable subject to exposure. A minimum clear cavity width of 50mm free from all obstructions is recommended for all heights greater than 12m high. The NHBC accepts the use of EcoTherm Eco-Cavity with 50mm clear cavity, provided it is installed, used and maintained in accordance with the BBA certificate.

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

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

STORAGE

Store boards in a flat, dry area off the ground away from mechanical and water damage and sources of ignition.

If temporary outdoor storage cannot be avoided then they must be completely protected by use of an opaque polythene sheet or tarpaulin.

Boards that have been allowed to get wet should not be used.

Table 1

Thickness (mm)	Weight per board (kg)	Typical U-value Brick & dense block (W/m^2K)	Typical U-value Brick & medium block (W/m^2K)	Typical U-value Brick & light block (W/m^2K)	Typical U-value Light block & Dense Block (W/m^2K)
40	0.9	0.32	0.31	0.29	0.27
50	1.1	0.28	0.27	0.25	0.24
60	1.2	0.25	0.24	0.23	0.21
65	1.3	0.24	0.23	0.22	0.20
70	1.4	0.22	0.22	0.21	0.19
75	1.5	0.21	0.21	0.20	0.19
80	1.6	0.20	0.20	0.19	0.18
90	1.7	0.19	0.18	0.17	0.17
100	1.9	0.17	0.17	0.16	0.15

Calculations are based on a 50mm residual cavity. Adjustments for fixings to be included once fixing centres / type have been confirmed. The calculations are based on the following block lambda:

Dense block 1.13W/mK | Medium block 0.51W/mK | Lightweight block 0.19W/mK

Can't see your required thickness? Contact Technical Services for further assistance.

The U-values quoted 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**

105-200mm Call EcoTherm Technical Services for information

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Please consult EcoTherm for details of BBA certificate numbers for specific products
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