



EuroWall[®] Cavity

Product Guide

PIR insulation for Cavity Walls.

...a better way

Introduction

The Company.

Driven by a culture of innovation, technical competence and flair, Recticel Insulation Products is dedicated to raising the standard of quality of insulation products in the UK.

Recticel Insulation, based at its new state-of-the-art facility in Stoke-on-Trent, is part of the International Recticel Group, one of the world's largest producers of PIR insulation products. At Recticel Insulation, quality is at the heart of everything we do. Striving for excellence in quality of both product and service, Recticel Insulation will raise the standards and product demands of the customer by delivering to the UK unparalleled PIR product and service quality. Our mission is, to demonstrate that, on all levels, Recticel Insulation will continue to deliver '**a better way**' of Insulation.





Insulation for Cavity Walls.

Eurowall Cavity is a high performance rigid PIR foam cavity board for use in partially filled masonry cavity walls up to 25m high.

Description.

Eurowall Cavity is a closed cell, CFC and HCFC-free (zero ozone depletion potential), rigid polyisocyanurate foam core faced, both sides, with a multi-layer coated aluminium foil. It has an exceptionally low thermal conductivity of 0.022 W/mK. Benefits of Eurowall cavity insulation boards

Wider choice.

Eurowall Cavity, in a wide range of thicknesses, will assist in meeting the appropriate Building Regulation standard with any form of cavity wall construction.

Quality.

Outstanding product quality manufactured to ISO 9001 Quality Systems.

Ozone friendly.

Zero ozone depletion potential.

Global Warming.

CFCs, HCFCs and HFCs are all powerful greenhouse gases. Pentane on the other hand satisfies the "Green Guide to Specification" and the Intergovernmental Panel on Climate Change (IPCC) confirming a Global Warming Potential of below 5.

All our products have a global warming potential of below 5.

Low thermal conductivity.

The declared thermal conductivity value of 0.022 W/mK is some 30% more efficient than most other insulation materials.

Insulation savings.

If a lightweight block is used for the inner leaf construction it is possible to meet the new Building Regulation requirement with only 50mm of Eurowall Cavity.

Reduced risk of condensation.

Walls fitted with Eurowall Cavity boards create more even warm conditions so reducing the risk of condensation. Effective below DPC Eurowall Cavity boards may be used below the damp proof course in order to offer a degree of edge insulation to the floor.

Partial fill system.

The risk of wind driven rain penetration increases when using any full cavity fill system especially on exposed or coastal locations. The use of a residual 50mm clear cavity means Eurowall Cavity may be used in any exposure zone.

Minimum residual cavity.

Agrément Board approval means that in many instances only a 25mm residual cavity need be maintained. The design data in BBA Certificate 02/3908 should be carefully followed.

Handling.

Eurowall Cavity is lightweight yet tough and resilient. It is easily cut using a knife or fine-toothed saw.

Durability.

Eurowall Cavity is rot-proof, durable and maintenance free.

CE Marking.

All of our products carry the CE Mark to show compliance with the harmonised European Standard BS EN 13165.

Design

Design.

Cavity Width.

As stated earlier the use of very high efficiency insulation has benefits when achieving high standards of insulation without a great increase in the overall wall thickness. For buildings up to 12m high a minimum residual cavity width of 25mm may be acceptable depending on the exposure zone. It is important to ensure that the 25mm residual cavity is maintained, kept clean and clear of all debris and obstructions. To comply with NHBC or Zurich Building Guarantee requirements however a 50mm residual cavity must be provided in all cases irrespective of the exposure zone.

Rainwater Penetration.

Above door, window and other openings the lintel should be protected by the use of a cavity tray with appropriate stop-ends and weep holes. Projections and discontinuities within the cavity such as changes in wall thickness or ring beams may also require a cavity tray.

Thermal Bridging.

With increasing levels of insulation it is vitally important to ensure continuity of the insulation at the junction of elements and around door and window openings.

At the junction of the floor and the wall a vertical section of insulation at the floor edge, the use of lightweight insulating blocks or extended cavity insulation can all help to reduce thermal bridging. (See Figures 1, 2 & 3).

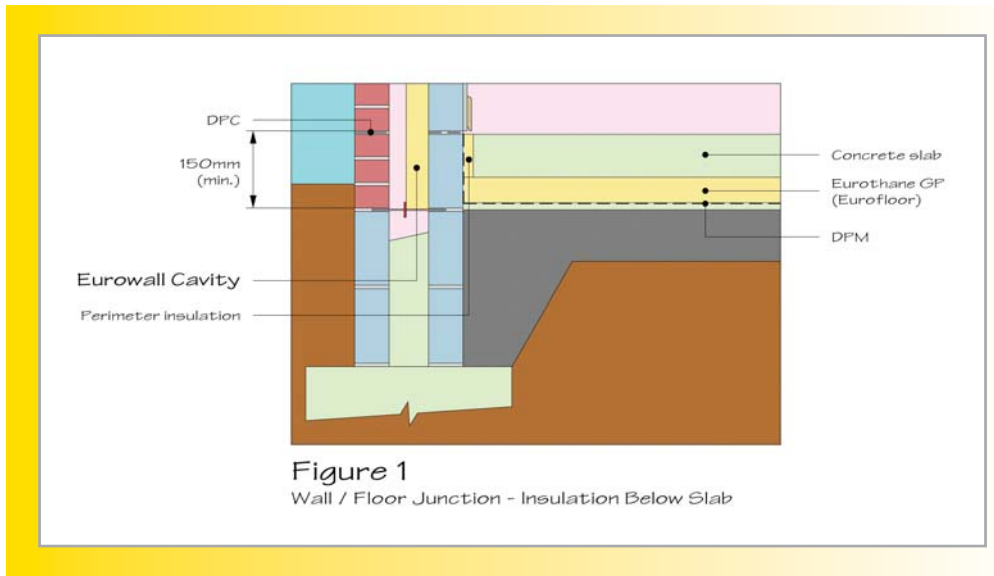
Around door and window openings careful detailing of the cavity wall insulation along with the use of proprietary insulated cavity closers and insulated lintels can help to reduce thermal bridging. (See Figures 4, 5 & 6).

In a cold roof construction the cavity insulation should extend at least 250mm above the ceiling line and should be protected by the use of a cavity tray. At gable walls with warm roof construction the insulation should be continued to the underside of the roof to ensure continuity of the wall and roof insulation. (See Figures 7, 8 & 9).

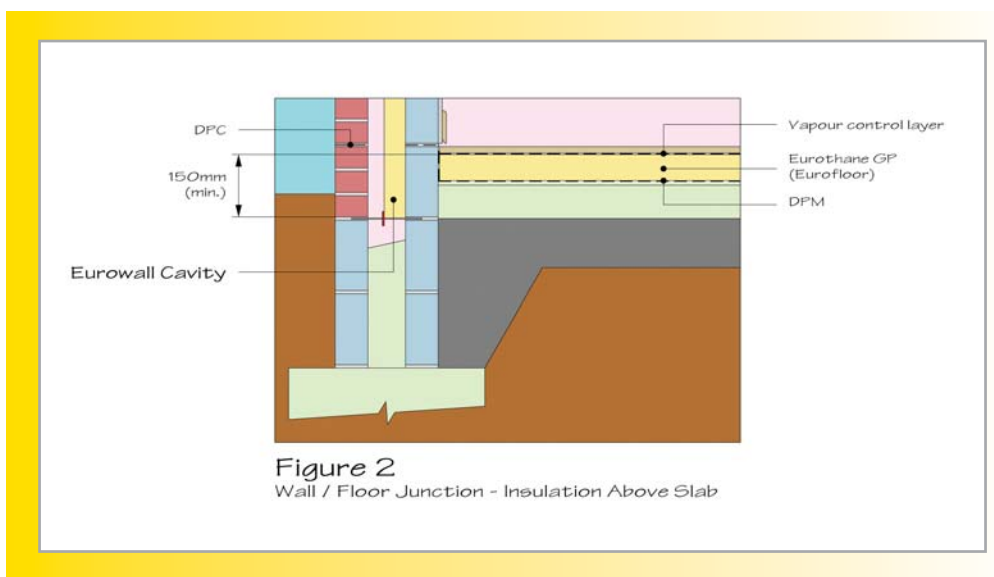
Fire Performance.

When used within a masonry cavity wall constructed in accordance with BBA Certificate 02/3908. EuroWall Cavity will not prejudice the fire resistance properties of the wall. Cavity barriers are not required but the cavity must be closed at the eaves, verges and around any openings.

Wall / Floor Junction - Insulation Below Slab Figure 1.

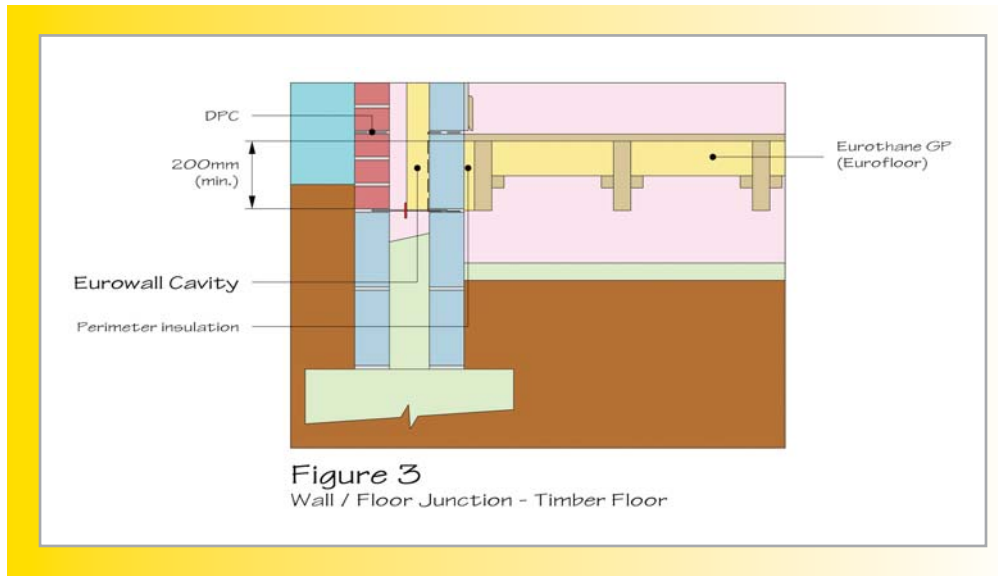


Wall / Floor Junction - Insulation Above Slab Figure 2.

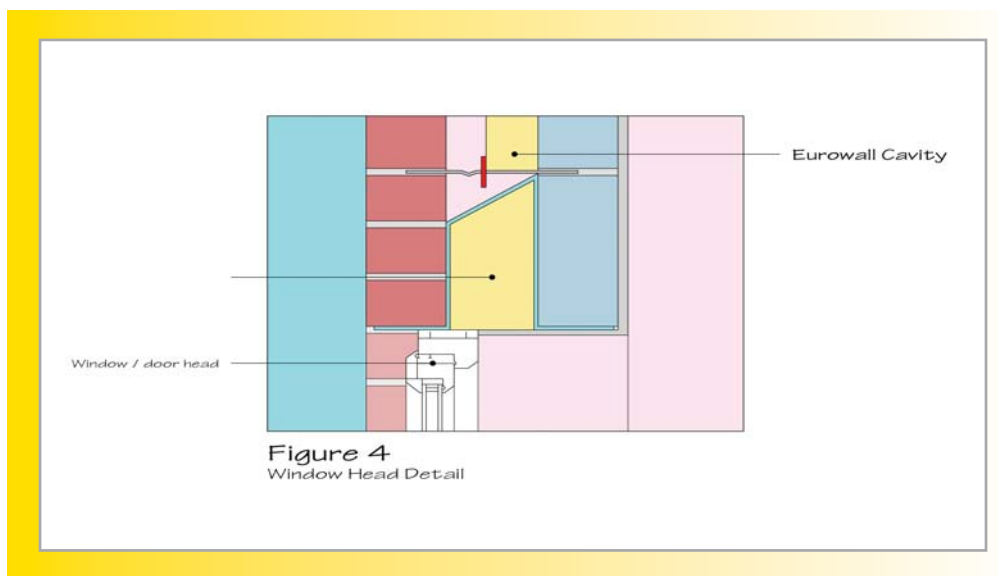


Installation

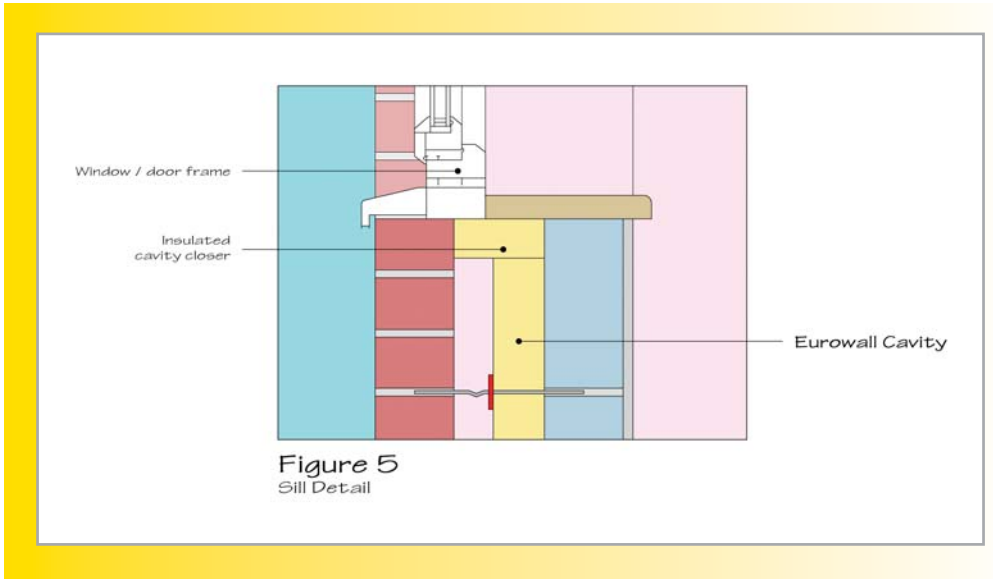
Wall / Floor Junction - Timber Floor
Figure 3.



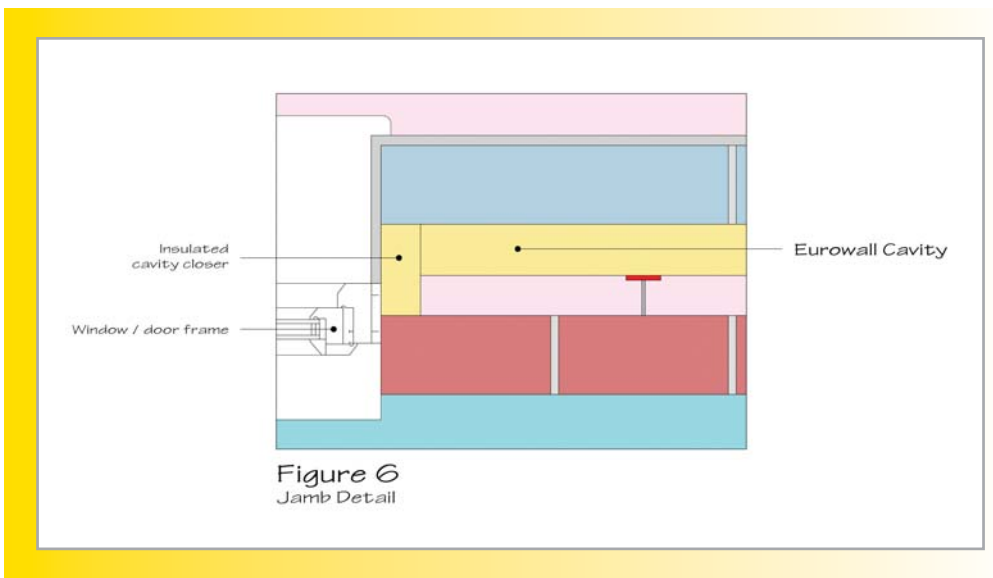
Window Head Detail
Figure 4.



Sill Detail
Figure 5.

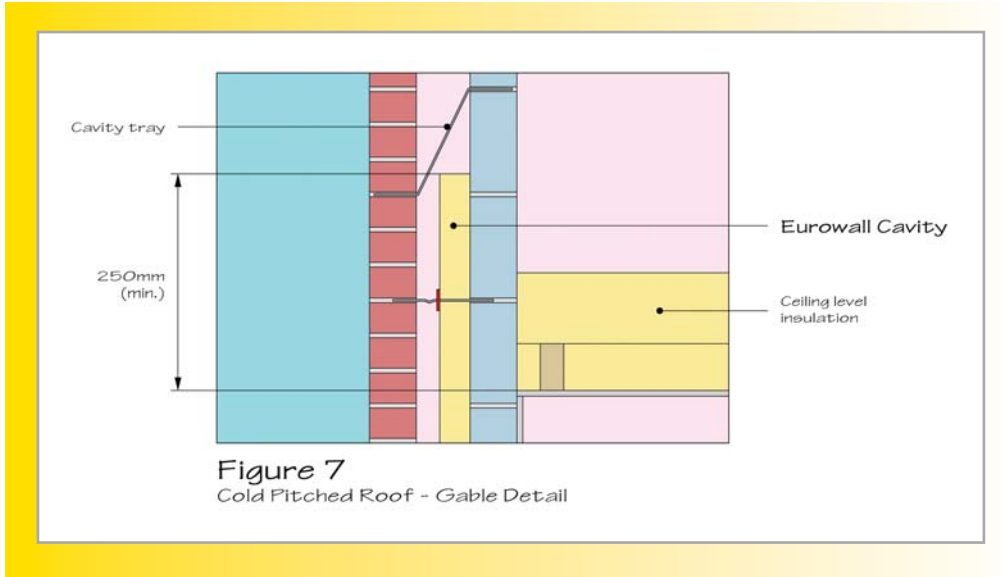


Jamb Detail
Figure 6.

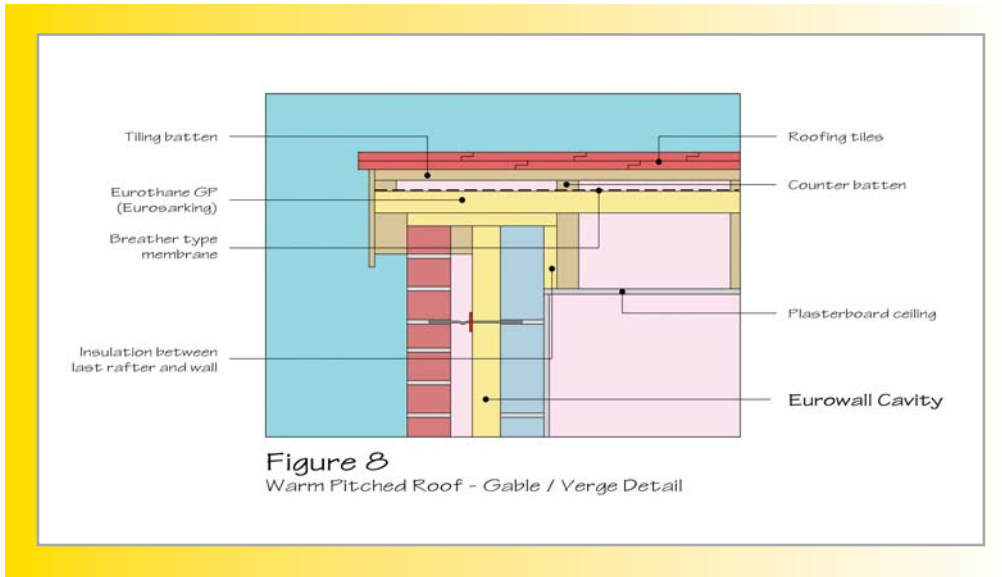


Installation

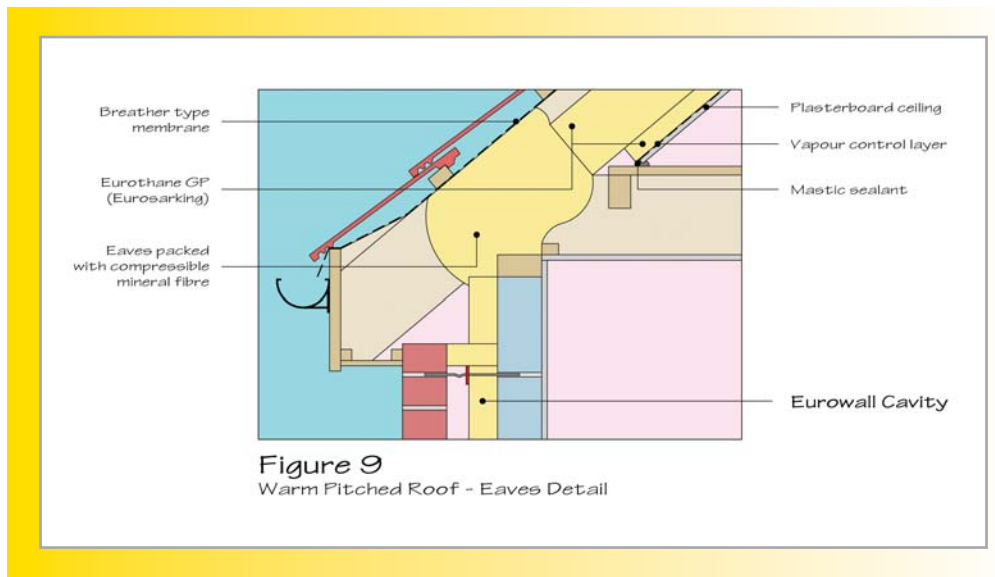
Cold Pitched Roof - Gable Detail
Figure 7.



Warm Pitched Roof - Gable / Verge Detail
Figure 8.



Warm Pitched Roof - Eaves Detail Figure 9.



Installation

Installation.

Generally the inner leaf is constructed ahead of the outer leaf with the Eurowall Cavity boards fastened to the cavity face of the inner leaf using the wall ties or clips. Wall ties with collars are required to hold the boards in position. Spacing of the wall ties should follow the recommendations given in BS 5628. Eurowall Cavity boards are 450mm wide to fit the 450mm vertical spacing of the wall ties. The horizontal spacing may vary but should be no more than 900mm to ensure adequate retention of the boards.

The usual procedure for construction is:

- 1) The inner leaf is built with the first row of wall ties at 600mm centres where the insulation is to begin.
- 2) The first row of Eurowall Cavity boards, cut to size if necessary, may begin below the DPC in order to offer edge insulation to the floor.
- 3) Raise the leading leaf to the level of the next row of wall ties, normally at 450mm vertical centres. Excess mortar should be cleaned from the inner leaf before fitting the boards onto the lower ties and securing with a retaining collar.
- 4) The next row of wall ties is fitted at maximum 900mm centres to retain the tops of the boards. Ensure that the drip is positioned at the centre of the residual cavity and that the ties slope down towards the outer leaf.
- 5) Additional ties may be required for structural stability or to ensure adequate retention of the cavity boards.
- 6) The outer leaf is then built to the level of the top of the boards and the process repeated.
- 7) The subsequent rows of boards should be fitted with vertical joints staggered i.e. brick bond with all joints tightly butted. Boards with damaged edges or corners should not be used.
- 8) As work proceeds ensure that the residual cavity is kept clean and free from mortar droppings or other debris. The use of a cavity batten will help to protect the board edges and keep the cavity clean as the next section is built.
- 9) Cut sections of board may be required around openings or at corners. It is essential that these be cut accurately to fill the space they are intended for and are adequately secured.

Heat Loss Calculations.

Description.

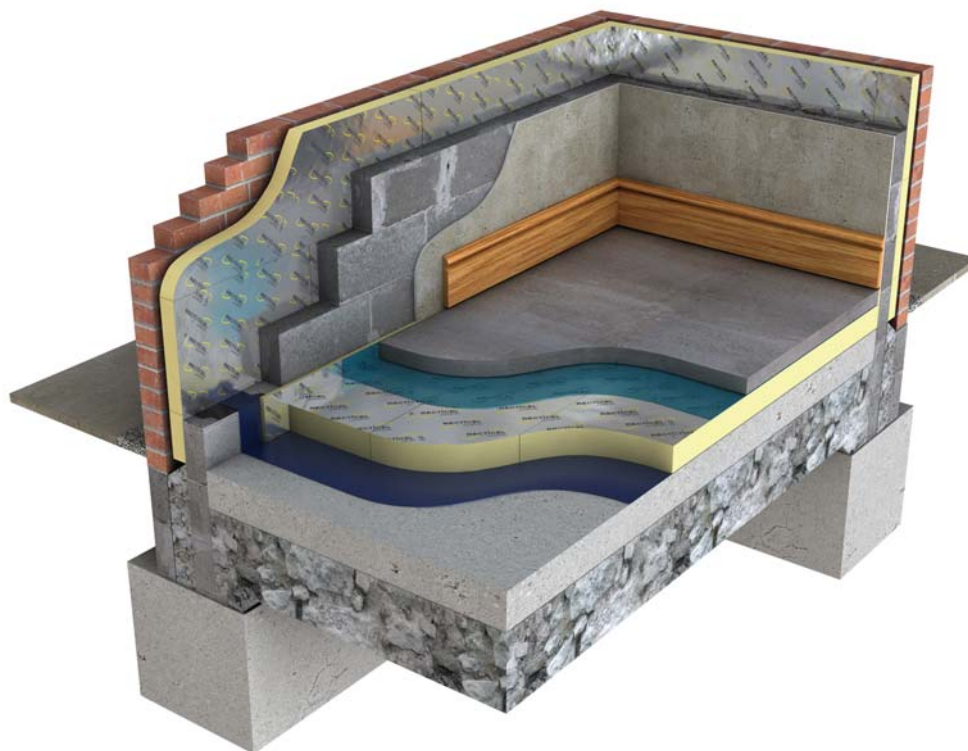
The method of calculating U-values is the Combined Method (see BS EN ISO 6946:2007) which as well as assessing the thermal bridge effect of mortar joints, timber studs etc also accounts for air gaps in the insulation and mechanical fasteners penetrating the insulation.

The Building Regulations no longer use the Elemental U-value Method as a means of showing compliance. In new build a U-value in the region of 0.25 W/m²K will help ensure compliance whilst in extensions and refurbishment work a U-value of 0.30 W/m²K is required. The Building Regulations (Scotland) require a U-value of 0.27 W/m²K.

U-Value	Block Density (kg/m ³)	Block Value (W/mk)	Eurowall Cavity Thickness (mm)		
			0.30 W/m ² k	0.25 W/m ² k	0.20 W/m ² k
450		0.11	35	50	70
600		0.16	40	55	75
800		0.19	40	55	75
1000		0.34	45	60	80
1200		0.44	45	60	80
1400		0.57	45	60	80
1600		0.99	50	65	85
1800		1.13	50	65	85
2000		1.33	50	65	85
2200		1.59	50	65	85
2400		1.93	50	65	85

Typical Construction:

103 mm brick • 25 mm (minimum) clear cavity • Recticel Eurowall Cavity • 100 mm Block (density and thermal properties as shown) • Plaster dabs cavity • 12.5 mm Plaster board • 2mm Skim



Technical Details

Technical Details.

Eurowall Cavity board is available in the following dimensions:

Length (mm)	1200
Width (mm)	450
Thickness (mm)	25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 100

Some thicknesses may be subject to minimum order quantities. Other sizes and thicknesses are available on request. Please contact Recticel Customer Services for more information.

Specifications Clause.

The partial fill cavity wall insulation shall be mm thick Recticel Eurowall Cavity CFC and HCFC-free, rigid PIR foam with coated aluminium foil facings to both sides. Insulation to be installed as work proceeds in accordance with Recticel Insulation Products instructions and the requirements of BBA Certificate No. 02/3908.

Designation Code.

PUR – EN 13165 – T2 – DS(TH)4 – DLT(2)5 – CS(10/Y)120 – WL(T)2

Compressive Strength.

Compressive strength exceeds 120 kPa at yield.

Thermal Conductivity.

The declared thermal conductivity, λ D-value, of Eurowall Cavity is 0.022 W/mK when tested using BS EN 13165: 2001.

Moisture Vapour Transmission.

The foil faces of the Eurowall Cavity board give it an almost infinite water vapour resistance value. The joints between boards however will facilitate the passage of moisture vapour under normal conditions of temperature and humidity; a practical value for the moisture vapour resistance of the system is 100 MNs/g.

Specific Heat Capacity.

The specific heat capacity is 1.4 kJ/kgK.

Durability.

When correctly installed, Eurowall Cavity board is maintenance free and has an indefinite life at least equal to that of the building.

Storage.

Eurowall Cavity boards are supplied wrapped in polythene to provide short term protection. On site the boards should be stored in dry conditions, clear of the ground, on a clean level surface.

Reaction to Fire.

Euroclass F (BS EN 13501-1)
Class 1 (BS 476, Part 7)



Health and Safety.

Eurowall Cavity Insulation boards are inherently safe to handle. During cutting or machining any dust generated is of nuisance value only. Large scale machining should be connected to a dust extraction system. Please note that the reflective surface on this product is designed to enhance its thermal performance. As such, it will reflect light as well as heat, including ultraviolet light. Therefore, if this board is being installed during bright weather, it is advisable to wear UV eye protection, and if the skin is exposed for a significant period of time, to protect the bare skin with a high SPF sun cream. The reflective facing used on this product can become slippery when wet. Ensure care is taken to avoid skin and eye contact with any sharp edges. Do not stand on or otherwise support your weight on this board unless it is fully supported by a load bearing surface.

A comprehensive health and safety data sheet is available from Recticel Insulation Products upon request.

References.

Agrément Certificate No. 02/3908.

The Building Regulations and supporting documents.

Thermal Insulation: avoiding risks. Limiting Thermal Bridging and Air Leakage: Robust Construction Details for Dwellings and Similar Buildings. (DTLR/DEFRA).

CIBSE Guide A3 - Thermal Properties of Buildings and Components.

DD140 Wall Ties.

BS EN 845-1 Specification for ancillary components for masonry. Ties, tension straps, hangers & brackets.

BS 5250 Code of Practice for Control of Condensation in Buildings.

BS 5262 Code of Practice for External Renderings.

BS 5628 Code of Practice for Masonry.

BS 5390 Code of Practice for Stone Masonry.

BS 8000 Workmanship on Building Sites.

Part 3 Code of Practice for Masonry.

BRE Digests, Information Papers and Good Building Guides.

Contact Details.

Technical Desk Freephone 0800 0854079

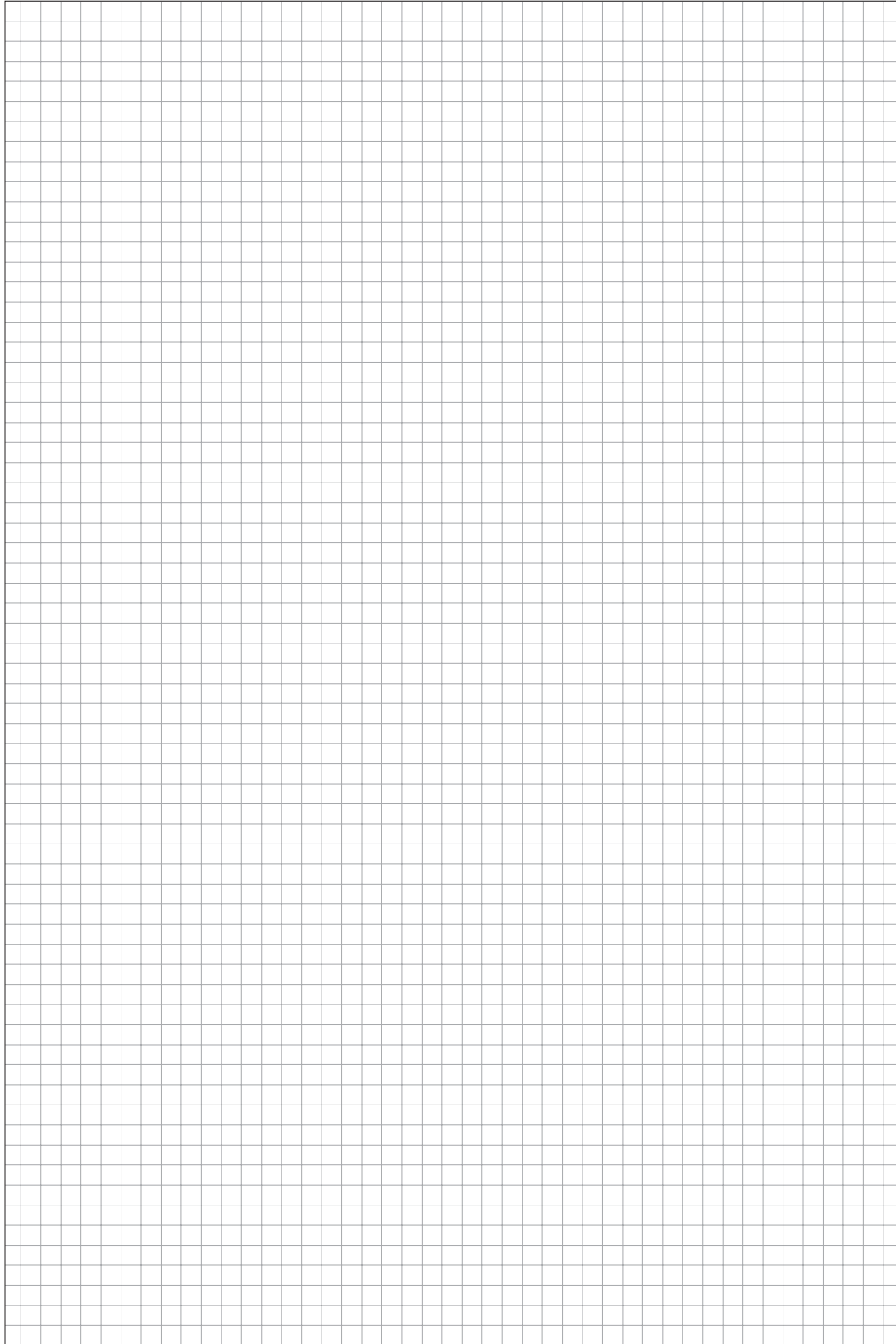
Email: technicalservices@recticelinsulation.com

The information, technical details and other instructions included in this literature are correct at the time of publication and apply to the uses described. Heat loss calculation figures quoted are for guidance only. A detailed U-value calculation together with condensation risk analysis should be completed for each individual project. Please contact Recticel Insulation Technical Service Department for assistance.

Recommendations for use should be verified as to the suitability and compliance with actual requirements, specifications and any applicable laws and regulations. For other applications or conditions of use, contact Recticel Insulation Technical Service Department for assistance.

Recticel Insulation Ltd. reserves the right to amend product specifications without prior notice.

Notes



The logo for RECTICEL insulation features the word "RECTICEL" in a bold, white, sans-serif font. Below it, the word "insulation" is written in a smaller, white, lowercase script font. Two bright yellow curved lines, one above and one below the text, form a partial circle around the brand name.

RECTICEL
insulation





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V4.1/05/12
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