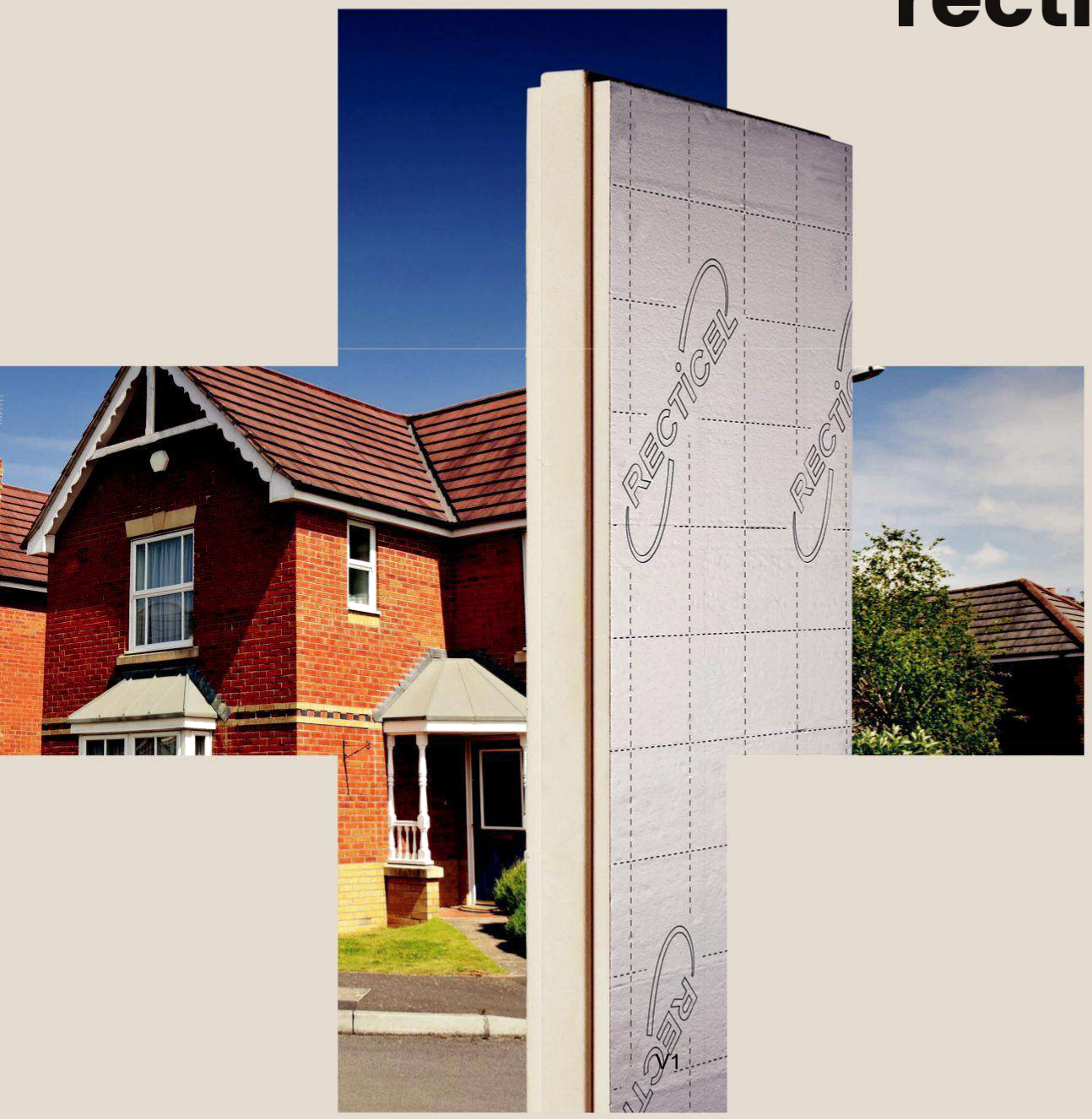
recticel



eurowall +

Product Guide

V1

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What is Full-Fill Cavity Wall Insulation?

Cavity wall insulation insulation involves insulating the cavity between the inner and outer walls to form a thermal barrier. Generally, uninsulated or poorly insulated walls account for up to 35% of a property's heat loss[1]. Therefore, cavity wall insulation is a common pathway to creating comfortable and energy-efficent homes

However, with architects and specifiers unwilling to sacrifice internal space to accommodate a larger cavity but still wanting to increase thermal efficiency and improve internal comfort, insulation has to evolve. Recticel's manufacture of **Eurowall+** delivers polyisocyanurate (PIR) insulation which can be used as a full-fill product in cavity walls where compliance and retaining residual space is a priority.

Eurowall+ 'Designed with the installer and end user in mind'

Eurowall+ is a rigid PIR foam board. It comprises a low emissivity reflective foil-facing to ensure maximum thermal performance. Available in 75mm, 90mm, 115mm and 140mm thicknesses, the boards feature tongue and groove edging on all four sides, ensuring a tight, interlocking fit that protects against thermal bridging and moisture across the cavity.

As certified by BBA, **Eurowall+** boards are suitable for use as full-fill thermal insulation (with a minimum 10mm residual cavity) in new domestic and commercial buildings as full-fill insulation in external masonry cavity walls.

A 90mm **Eurowall+** board can help to achieve a 0.18W/ m2K U-value in 100mm cavity whilst allowing a minimum 10mm residual gap. This eliminates the requirement to widen the external wall's footprint or reduce room sizes to attain lower U-values. Using **Eurowall+** insulation board simplifies the installation process by enabling the use of conventional bricklaying techniques when positioning the outer leaf brick or block.



[1] South East Wales Energy Agency 'Home Insulation' report



Overview

Eurowall® + is a thermal insulation board for full-fill masonry cavity wall applications.

Tongue & Groove Joints

- Tongue and groove joints prevent moisture from crossing the cavity to the inner leaf
- General boards do not need taping due to the tongue and groove joint. However, please refer to the BBA certification for specific requirements at corner details and openings.

Thermal Performance

- PIR insulation is among the most thermally efficient insulation types available
- Good performance with conventional wall footprints – 100mm, 125mm and 150mm cavity sizes
- Bricklayers can use conventional installation techniques

Product Options

- **Eurowall® +** can help achieve a 0.18W/m²K U-value in 100mm masonry cavity walls
- Options available in current range (75mm, 90mm, 115mm and 140mm)
- A range of thicknesses that can assist with complying with the latest energy efficiency targets.





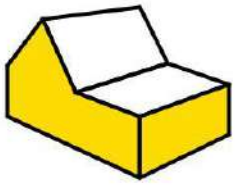
Thermal performance of λ = **0.022 W/mK**



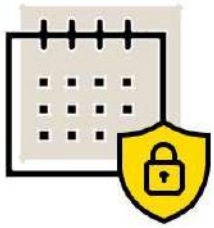
Convenient installation



Can help to achieve **0.18 U-value** in **100mm cavities**



Tongue and groove joints prevent moisture from **crossing the cavity to the inner leaf**



Has the ability to comply with **incoming building regulations**

Thermal Resistances

Product Code	Thickness (mm)	R-value (m_2K/W)
64698/008	75	3.40
64698/002	90	4.05
64698/004	115	5.20
64698/006	140	6.35

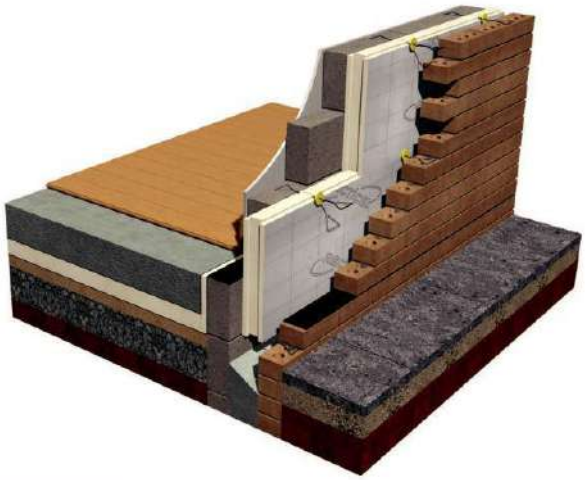
Key Specifications

Thermal Conductivity Lambda (λ)	0.022 W/mK
Water vapour diffusion coefficient (foam)	Tabulated value EN ISO 10456 μ 50-100
Fire Performance	Euroclass F, EN 13501-1
Emissivity**	ε = 0.05
Dimensions	1190mm (l) x 450mm (w) (1200mm (l) x 460mm (w) including the tongue and groove)
Facing	Gas diffusion tight multilayer foil on both sides
Certification	BBA 23/7305

Thermal Performance

Typical U-values (W/m2K) achieved in common wall constructions

Brick And Block Cavity Wall



- 102.5mm outer leaf brickwork
- Low emissivity unvented cavity, 10mm minimum
- Recticel **Eurowall+**, thickness as indicated
- 100mm inner leaf concrete blockwork, thermal conductivity as indicated
- Plasterboard on dabs

Insulation thickness (mm)	Inner leaf block thermal conductivity (W/mK)					
	0.11	0.15	0.22	0.47	0.59	1.13
75	0.20	0.21	0.21	0.22	0.23	0.23
90	0.18	0.18	0.19	0.19	0.20	0.20
115	0.15	0.15	0.15	0.16	0.16	0.16
	0.13	0.13	0.13	0.13	0.14	0.14

Rendered Dense Block And Block Cavity Wall



- 19mm render
- 100mm outer leaf blockwork, dense (1.13 W/mK thermal conductivity)
- Low emissivity unvented cavity, 10mm minimum
- Recticel **Eurowall+**, thickness as indicated
- 100mm inner leaf concrete blockwork, thermal conductivity as
- indicated Plasterboard on dabs

Insulation thickness (mm)	Inner leaf block thermal conductivity (W/mK)					
	0.11	0.15	0.22	0.47	0.59	1.13
75	0.20	0.21	0.21	0.23	0.23	0.23
90	0.18	0.18	0.19	0.20	0.20	0.20
115	0.15	0.15	0.15	0.16	0.16	0.16
140	0.13	0.13	0.13	0.14	0.14	0.14

Part L Regulations: Setting New Standards for Improved Energy Performance in Buildings

Building Regulations Part L covers the conservation of fuel and power in the building of new homes in England and sets the energy performance standards of existing buildings. The built environment currently contributes approximately 40% of UK greenhouse gases, 17% of which is estimated to emanate from new and existing homes[1]. Improving the energy performance of buildings will not only limit greenhouse gas emissions, it will reduce the cost of energy in occupation.



To help achieve this and meet the government's net zero target, in June 2022, the Part L regulation underwent its biggest shake-up since 2013. The new legislation puts a focus on improving the energy efficiency of new homes through a fabric-first approach to design and the use of renewable technologies such as heat pumps. The overall aim of this hybrid solution is to reduce the carbon output of new dwellings by 31%. Crucially, the updated regulations include a tightening of standards for already-built homes in relation to extensions and replacements. The implementation of the Part L changes has a more stringent transition period compared to previous versions. Any ongoing projects following the 2013 version of Approved Document L2A must have commenced on site prior to June 15th 2023 in order to be exempt from the new requirements. Additionally, the design approval must be revised accordingly.

The Interim Part L changes are a precursor to the Future Homes Standard (FHS)[2] and Future Building Standard. Taking effect from 2025, the FHS will require new homes to produce 75-80% lower carbon emissions than properties built to the previous standard.

1 Heat and Buildings Strategy, HM Government (2021), p.29

2 www.gov.uk/government/news/rigorous-new-targets-for-green-building-revolution

Review of Interim Part L Changes (England)

The updated Part L changes cover two documents rather than four. It now comprises Approved Document L1 for new and existing domestic buildings (ADL1), and Approved Document L2 for new and existing non-domestic buildings (ADL2). The new changes highlight a mix of fabric performance and low carbon technologies as being essential to creating energy-efficient homes.

Please see the below table which highlight the new energy performance standards in England.

Part L 2021 England – Came into force from 15th June 2022

Element	New Buildings					Existing Buildings			
	L1A (Dwellings)		L2A (Non-Dwelling)			L1B (Dwellings)		L2B (Non-Dwelling)	
	Limiting U-values[1]	Notional Dwelling[2]	Limiting U-values[1]	Notional Building		Target U-values		Target U-values	
				Side-lit and Unlit Activities	Top-lit Activities	New	Retained (Improved)	New	Retained (Improved)
Floor	0.18	0.13	0.18	0.15	0.22	0.18	0.25	0.18	0.25
Wall	0.26	0.18	0.26	0.18	0.26	0.18	0.30 (E/IWI) 0.55 (C/W)	0.26	0.30 (E/IWI) 0.55 (C/W)
Party Wall	0.20	0.00	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Flat Roof	0.16	0.11	0.18	0.15	0.18	0.15	0.16	0.18	0.18
Pitched Roof (slope)	0.16	0.11	0.16	0.15	0.18	0.15	0.16	0.16	0.18
Pitched Roof (Horizontal Ceiling)	0.16	0.11	0.16	0.15	0.18	0.15	0.16	0.16	0.16

[1] Fabric performance should not be worse than the limiting U-Values

[2] Notional Dwelling could be used as a best starting point

This table outlines indicative fabric target values following the Future Homes Standard's introduction in 2025. The FHS was devised during consultations for Part L, which was designed to provide an uplift in emisssoins reductions prior to the Standard's implementation.

Future Homes Standard 2025 - Indicative

Element	2013 Part L Standards	Current 2021 Part L Standards	Indicative FHS Specification (2025)
Floor U-value (W/m2K)	0.13	0.13	0.11
External Wall U-value (W/m2K)	0.18	0.18	0.15
Roof U-value (W/m2K)	0.13	0.11	0.11
Window U-value (W/m2K)	1.4	1.2	0.80
Door U-value (W/m2K)	1.00-1.20	1.00	1.00
Air Permeability at 50 Pa	5.0 m3/(h.m2)	5.0 m3/(h.m2)	5.0 m3/(h.m2)
Heating Appliance	Gas Boiler	Gas Boiler	Low-Carbon Heating (e.g. Heat Pump)
Heat Emitter Type	Regular Radiators	Low Temperature Heating	Low Temperature Heating
Ventilation System Type	Natural (With Extract Fans)	Natural (With Extract Fans)	Natural (With Extract Fans)
PV	No	40% Floor Area	None
Wastewater Heat Recovery	No	Yes	No

Guidance on the ADLs for the existing version of Part L to the Building Regulations (ADL 2013) is retained at the bottom of this page for reference. This guidance will generally apply to individual units where plans have been submitted by 14th June 2022 and work on the unit has commenced by 14th June 2023. Please discuss with building control for further guidance.

Part L 2013 England (For reference)

Element	New Buildings				Existing Buildings			
	L1A (Dwellings)		L2A (Non-Dwelling)		L1B (Dwellings)		L2B (Non-Dwelling)	
	Limiting U-values[1]	Notional Dwelling[2]	Limiting U-values[1]	Notional Building	Target U-values		Target U-values	
					New	Retained (Improved)	New	Retained (Improved)
Floor	0.25	0.13	0.25	0.22	0.22	0.25	0.22	0.25
Wall	0.30	0.18	0.35	0.26	0.28	0.30 (E/IWI)	0.28	0.30 (E/IWI)
Party Wall	0.20	0.00	n/a	n/a	n/a	n/a	n/a	n/a
Flat Roof	0.20	0.13	0.13	0.18	0.18	0.18	0.18	0.18
Pitched Roof (Slope)	0.20	0.13	0.13	0.18	0.18	0.18	0.18	0.18
Pitched Roof (Horizontal Ceiling)	0.20	0.13	0.13	0.18	0.16	0.16	0.16	0.16

Review of Interim Part L Changes (Wales)

Part L amendments (Wales) include the adoption of SAP 10 methodology. Newly constructed buildings are obligated to achieve a minimum energy efficiency standard. This is in order to attain a minimum Energy Performance Certificate (EPC) B or 81 rating. New-build homes will also be subject to mandatory air tightness testing. Part L legislation applies to properties where building work is scheduled to start on or after November 23rd, 2023. Part O, a document dedicated to addressing overheating risk separate from Part L and SAP, has also been introduced to Wales.

Please see below Part L Wales Standards (2022).

Part L Wales Standards (2022)

Element		New Buildings				Existing Buildings		
		Limiting U-values[1]	Notional Dwelling[2]	Limiting U-values[1]	Notional Building	Target U-values	Target U-values	
		L1A (Dwellings)		L2A (Non-Dwelling)		L1B (Dwellings)	L2B (Non-Dwelling)	
							"Domestic"	Other
Floor		0.15	0.11	0.22	0.22	0.15	0.18	0.22
Wall	Wall – Dwelling Houses	0.18	0.13	0.26	0.26	0.18	0.21	0.26
	Wall – Flats	0.21	0.18	0.26	n/a	0.21	n/a	n/a
Party Wall		0.20	0.00	n/a	0.18	0.20	0.15	0.16
Roofs	Flat Roof / Pitched Roof (Slope)	0.13	0.11	0.20	0.18	0.13	0.15	0.18
	Pitched Roof (Horizontal Ceiling)	0.13	0.11	0.20	0.18	0.13	0.15	0.15

[1] Fabric performance should not be worse than the limiting U-Values

[2] Notional Dwelling could be used as a best starting point

For reference, this table outlines Part L Wales Standards (2014)

Part L Wales Standards (2014)

Element	New Buildings				Existing Buildings	
	Limiting U-values[1]	Notional Dwelling[2]	Limiting U-values[1]	Notional Building	Target U-values	
	L1A (Dwellings)		L1B (Dwellings)	L2A (Non-Dwelling)	L2B (Non-Dwelling)	
					"Domestic"	Other
Floor	0.18	0.15	0.18	0.22	0.18	0.22
Wall	0.21	0.18	0.21	0.26	0.21	0.26
Party Wall	0.20	0.00	0.20	n/a	n/a	n/a
Flat Roof	0.15	0.11	0.15	0.18	0.15	0.18
Pitched Roof (Slope)	0.15	0.11	0.15	0.18	0.15	0.18
Pitched Roof (Horizontal Ceiling)	0.15	0.11	0.15	0.18	0.15	0.15
Swimming Pool Basin	n/a	n/a	n/a	n/a	n/a	n/a

Review of Interim Section 6 Changes (Scotland)

In Scotland, amended Section 6 energy standards apply to new domestic and non-domestic building applications. The amendments are designed to achieve a 32% carbon emissions reduction compared to Section 6, 2015. A Delivered Energy compliance metric has been introduced alongside the existing carbon emissions standard. Airtightness testing using the CIBSE TM23 standard is mandatory for all new homes. The risk of overheating is now addressed in standard 3.28 and inline with England and Wales amendments, Section 6 changes include the adoption of SAP 10 methodology.

Please see below amended Section 6 energy standards for Scotland.

Section 6 (2025)

Element	Domestic		Non-Domestic	
	Notional Dwelling[1]	Alteration, Extension or Conversion and Back-Stops (Area Weighted Averages)	Notional Dwelling[1]	Alteration, Extension or Conversion and Back-Stops (Area Weighted Averages)
	New Build	Existing Dwelling	New Build	Existing Build
Floor	0.12	0.15	0.13	0.18
Wall	0.15	0.17	0.15	0.21
Roofs	0.09	0.12	0.11	0.16

The table outlines the 2015 section 6 energy standards.

Section 6 (2015)

Element	Notional Dwelling[1]	New / Upgraded Elements	Walls > 0.70, roof > 0.25
	New Build	Existing Dwelling	
Floor	0.15	0.18	0.15
Wall	0.17	0.22	0.17
Flat Roof	0.11	0.18	0.13
Pitched Roof (Slope)	0.11	0.18	0.13
Pitched Roof (Horizontal Ceiling)	0.11	0.15	0.11

[1] Notional Dwelling could be used as a best starting point



Installation and Guidance

Product Characteristics

Eurowall+ is designed for full-fill cavity wall constructions with a minimum cavity of 10mm, which should be maintained throughout the construction.

The main purpose of the cavity is to leave space for the bricklayer to position the outer leaf brick or block, which can otherwise be difficult and time consuming with a full-fill rigid insulation board. At the same time, the low emissivity aluminium facing offers enhanced thermal resistance from the cavity. Insulation retaining discs act as a spacer and effectively maintain the minimum cavity of 10mm between the insulation facing and external leaf.

The product is designed to be installed by a competent general builder experienced with this type of product.

Exposure Zones

The BBA certificate for **Eurowall+** covers the use of the product in any exposure zone, but does not preclude the need to apply an external render coat (or other suitable finish) to the external masonry in severe exposure zones where such application would be normal practice.

NHBC accepts the use of **Eurowall+**, other than in very severe exposure locations with fair-faced masonry, provided it is installed, used and maintained in accordance with the BBA certificate, in relation to NHBC Standards, Chapter 6.1, External masonry walls.

Use of Eurowall+ in Scotland

Section 3 of the Scottish Technical Handbooks deals with Environment, including 'Precipitation'. Figure 3.14 in (Wall type B) in section 3.10 illustrates a wall with cavity fill insulation and no residual cavity, which is "only recommended for sheltered conditions".

Therefore, before specifying **Eurowall+** on projects in Scotland, Recticel Insulation recommends consulting the relevant Local Authority Building Standards department to confirm the acceptability of a full-fill insulation product

Thermal Bridging

Linear thermal bridging is concerned with heat loss at junctions. To reduce heat loss it is necessary to ensure continuity of the insulation layer with adjacent building elements. This means careful detailing at junctions between elements to minimise the effects of thermal bridging.
For example, at gable ends the wall insulation should continue 250mm above the internal ceiling insulation and the cavity tray installed over.

To support the use of **Eurowall+**, Recticel Insulation has a range of thermal bridging details calculated to offer psi values for use in SAP calculations. Please email **technicalservices@recticel.com** for further details.

Cavity Barriers

The building designer and building control officer should be consulted regarding the inclusion and installation of cavity fire barriers to ensure compliance with the relevant provisions of the Building Regulations. Additional advice can also be sought from the cavity barrier manufacturer.

Installing Eurowall® +

1. The correct wall tie type should be selected for the type of building under construction. Wall tie manufacturers should be consulted for further advice regarding suitablity.
2. The internal leaf is constructed ahead of the external leaf. Any mortar protruding into the cavity airspace from the back of the internal leaf should be cleaned off before installing the product.
3. **Eurowall® +** insulation boards should be installed against the inner leaf, secured with universal retaining clips.
4. It is recommended that an additional wall tie is included within 225mm of openings on each board course level to satisfy the structural requirements of the wall.
   See Fig. 1.
5. Walls are constructed with the first row of wall ties where the insulation is to begin, but not directly on the DPC, and at approximately 600mm horizontal centres. The first row of boards can start below the DPC to allow at least a 150mm overlap with the floor insulation.
   See Fig. 2.
6. A section of the wall leaf is built up to a course above the next row of wall ties, which are placed at 450mm vertically and 900mm horizontally. Insulation boards are placed between two rows of wall ties with the tongue and groove joints tightly interlocked and vertical joints staggered. Slots should be cut with a sharp knife or fine toothed saw into the insulation boards to allow wall ties to fit snuggly between board joints, sloping down to the outer leaf.
7. Upon completion of each section, excess mortar should be removed and mortar droppings cleaned from exposed board edges before installation of the next section. Use of a cavity board is recommended to make cleaning easier.
   See Fig. 3.

Fig. 1. Reveal detail with double ties

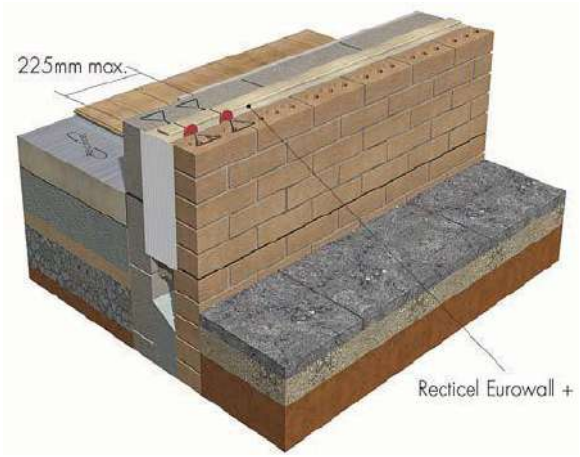


Fig. 2. Building in the first row of boards

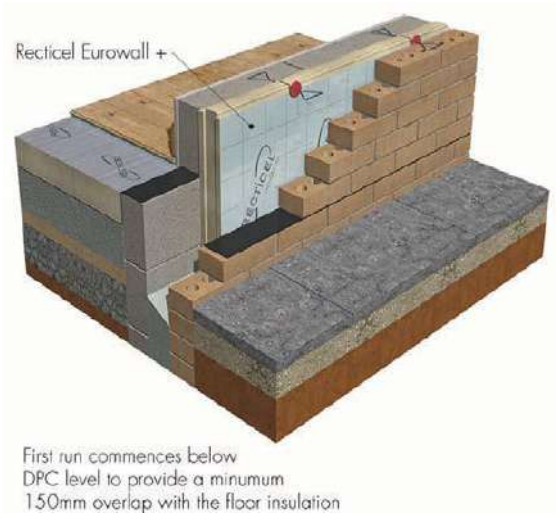


Fig. 3. Use of a cavity board when cleaning off excess mortar



8. To fit around any opening, doors or windows, boards should be cut carefully and accurately to completely fill the spaces for which they are intended, ensuring continuous insulation throughout the wall.

9. Where multiple openings are in close proximity, it is recommended that a continuous lintel or cavity tray is used. Proofing at lintel level must be provided with stop ends and weepholes.

10. Where required, door and window reveals must incorporate cavity closure depending on the set-back of the frame. **See Fig. 4.**

11. Corner details are formed by cutting the boards squarely and closely butt-jointing, or by cutting the board ends at a 45° angle to create a mitred joint, so that all board interfaces are uninterrupted. All corner details incorporate a 300 mm wide vertical Damp Proof Course (DPC), or suitable adhesive tape, overlapping beyond the board ends (at all courses). DPC or tape choices are outside of the scope of Recticel and advice on suitability should be down to the manufacturer of those items.

12. At the end of each day's work, or during any interruption in construction, the exposed unfinished cavity should be covered to protect it from poor weather.

Fig. 4. Reveal detail with cavity closure

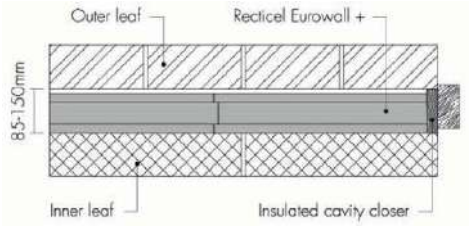


Fig. 5. External corner

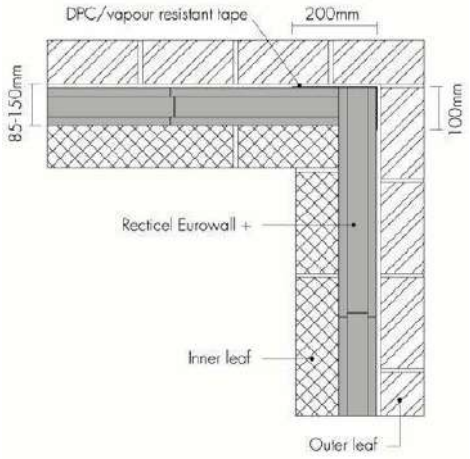


Fig. 6. Internal corner

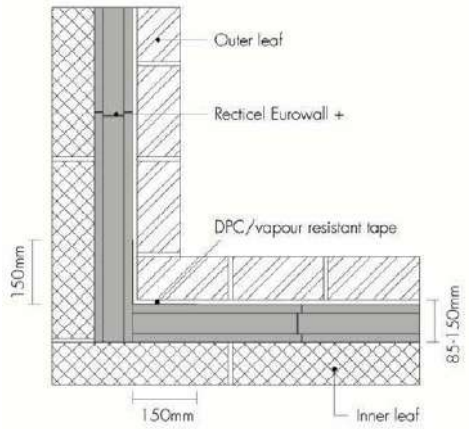
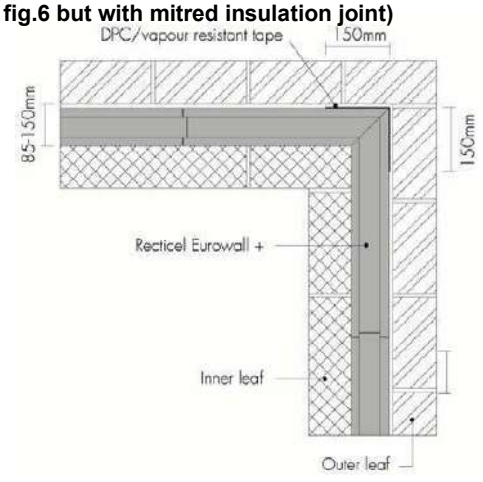


fig. 7. External corner (note: internal corner as per fig.6 but with mitred insulation joint)



A Guide to Eurowall® + Detailing

- At the design stage, a slightly larger wall cavity should be accounted for. This will help maintain the 10mm minimum residual gap by accommodating any tolerances during construction.
- The internal leaf is constructed ahead of the external leaf. Any mortar protruding into the cavity airspace from the back of the internal leaf should be cleaned off before installing the product.
- A suitable wall tie should be selected for the type of building under construction. Wall tie manufacturers should be consulted for further advice regarding specification.
- A double tie is required to be included within 225mm of openings on each board course level to meet a wall's structural requirements. Great care must be taken to avoid ties penetrating the boards.
- **Eurowall® +** insulation boards should be installed against the inner leaf, secured with universal retaining clips.
- Walls are constructed with the first row of wall ties where the insulation is to begin, but not directly on the damp proof course (DPC) and at approximately 600mm horizontal centres. The first row of boards can start below the DPC to allow at least a 150mm overlap with the floor insulation.
- A section of the wall leaf is built up to a course above the next row of wall ties, which are placed at 450mm vertically and 900mm horizontally. Insulation boards are placed between two rows of wall ties with the tongue and groove joints tightly interlocked and vertical joints staggered. Slots should be cut with a sharp knife or fine-toothed saw into the insulation boards to allow wall ties to fit snuggly between board joints, sloping down to the outer leaf.
- Upon completion of each section, excess mortar should be removed and mortar droppings cleaned from exposed board edges before installation of the next section. Use of a cavity board is recommended to make cleaning easier.
- To fit around door and window openings, boards should be cut carefully and accurately to fill the spaces for which they are intended, ensuring continuous insulation throughout the wall.
- Where multiple openings are in close proximity, it is recommended that a continuous lintel or cavity tray is used. Proofing at lintel level must be provided with stop ends and weepholes.
- Where required, door and window reveals must incorporate cavity closures depending on the frame's set-back.
- To form corner details, cut the boards squarely and closely butt-jointed. Alternatively, cut board ends at a 45-degree angle to create a mitred joint, ensuring board interfaces are uninterrupted. All corner details incorporate a vertical 300mm wide DPC or insulation tape can be used. *Please refer to BBA Certification for details on using insulation tape.*
- At the end of each day's work, or during any interruption in construction, the exposed unfinished cavity should be covered to protect it from poor weather.

First Detail: Corner Detailing

A step-by-step guide



Cut the board to size.



Ensure the **Eurowall® +** board is secured between 3 wall ties as per the BBA certification.



Once installed ensure the wall tie is within the tongue of the board and slopes down towards the outer leaf.



Ensure the tongue and groove detail is tightly fitted, with any wall ties inserted into the tongue of the board.



Once you approach the corner of your coursing, you may need to trim part of the tongue to stagger the board joints at the corner.



Install one of your **Eurowall® +** boards onto the corner.



Measure to get the length of your infill board to ensure an adequate fit of the corner before taping.



Once measured and cut, install your **Eurowall® +** board into the corner ensuring that the tongue and groove joints are fully engaged.



Once both corner boards have been installed you will see a butt joint like the picture.



As per the BBA certificate the corner detail can be addressed with a vertical Damp Proof Course (DPC) or suitable insulation tape.



Once your DPC has been vertically installed over the butt joint of the corner, use some insulation tape to secure the DPC to the **Eurowall® +** board.



Ensure that the DPC is secured with insulation tape on both sides of the corner.

Second Detail: Wall Ties

A step-by-step guide



Install the **Eurowall® +** board ensuring that it fits between the courses of wall ties.



Once installed ensure the wall tie is within the tongue of the board and slopes down towards the outer leaf.



Once all the wall ties are sloped downwards, add your wall tie clip.

Please note the building professional on this particular project chose to tape the board joints although this is not a requirement.

CASE STUDY

Foreman Homes

The Project

The multi-million pound developments at Hedge End in Southampton, and Ludgershall in Andover, contain nearly 300 plots as part of a mixed social and private property scheme undertaken by house builders, Foreman Homes. To maximise the long-term thermal performance of each home, a full-fill insulation board which allowed for better U-values, from a standard cavity wall build-up was required. Eurowall + met the brief perfectly.

In total, over 15,000m$_2$ of Eurowall + insulation boards were installed across the two housing developments.

> **Its' high insulation values made Eurowall + the obvious choice for the developments. We not only wanted to achieve NHBC standards in terms of each property's thermal performance, our ambition was to ensure each home maintained its energy efficiency for many years to come. Eurowall + will go a long way to helping secure that. For our on-site teams, the rigid foam board was a lot easier to handle than traditional forms of insulation.**
>
> Gary Hunt, Foreman Homes



CASE STUDY

Magenta Court



The Project

The Magenta Court development in Apsley, Hemel Hempstead is a multi-award nominated social housing project on behalf of Dacorum Borough Council. The £6.5m scheme, which stands alongside the famous Grand Union Canal, comprises 29, one-and-two-bedroom flats within four blocks. With an energy-efficient building fabric being key to the building programme's success, Jarvis Contracting – working in conjunction with architects RG+P – selected **Eurowall +** PIR solution from Recticel Insulation.

> **"This was a tremendous project to be involved with. It's a superb housing scheme in a great waterside location. With the buildings' overall thermal efficiency among the priorities, it's the type of project Eurowall + was created for. Further, it enhanced the programme's sustainable credentials by reducing on-site labour times, thanks to the additional space it affords installers.**

Simon Blackham,
Senior Technical Manager at Recticel Insulation

FAQs

What type of wall tie is required for Eurowall® + boards and how are they placed?

Wall tie suitability depends on varying factors such as the masonry leaf selection, cavity width, type and height of the building, as well as geographical location. Therefore, it is important to consult with a wall tie manufacturer and building professional prior to specification. Wall tie placement will coincide with the brick and block coursing. Ties are typically installed at 900mm horizontal and 450mm vertical spacing, and staggered across the row to provide even distribution.

Eurowall® + is designed to work with this spacing, with the boards secured by a minimum of three ties. The tie should be embedded within the tongue of the board, ensuring joints correctly interlock. For tight-fitting wall ties between board joints (sloping down to the outer leaf) slots should be cut with a sharp knife or fine-toothed saw into the insulation boards.

Additional ties are required at openings and reveals but this would mean penetrating the boards and facer and is not recommended. To address this requirement, an additional tie (double tie) should be included within 225mm of the opening at each board course level to meet the wall's structural requirements (please see the BBA certification and specification guide for further information).

Boards should be installed against the inner leaf, tied back tightly and secured with universal retaining clips.

How are corner details formed and is taping required for Eurowall® +?

Corner details are formed by cutting the boards squarely and closely butt-jointing, or by cutting board ends at a 45º angle to create a mitred joint (see page 10, 'Installing **Eurowall® +**' section). This eliminates gaps from board interfaces. **Eurowall® +** board corner details incorporate a vertical 300mm wide dampproof course (DPC) or a proprietary tape which is specially designed to seal PIR insulation corners and joints. **Eurowall® +** general board joints do not need taping due to its tongue and groove joint that guards against ingress when fully interlocked.

Is Eurowall® + suitable for buildings in exposed locations such as coastal areas?

In highly exposed areas, applications should be discussed with local building control to determine if any additional external coating or weatherproofing – such as render – are required. NHBC approves the use of **Eurowall® +**, other than in extremely severely exposed locations with fair-faced masonry, provided it is installed, used and maintained in accordance with the BBA certificate and in relation to NHBC Standards, Chapter 6.1, 'External Masonry Walls'.

Will I need local authority approval to install Eurowall® + as a full-fill insulation?

Eurowall® + is designed for full-fill cavity wall constructions with a nominal cavity of 10mm minimum, which should be maintained throughout the construction. Before specifying **Eurowall® +** on projects in Scotland or in highly exposed areas, Recticel Insulation recommends consulting the relevant Local Authority Building Standards department to confirm the acceptability of full-fill or partial-fill insulation products.

Is Eurowall® + specification consistent with a fabric-first building approach and Part L compliance?

Yes. **Eurowall® +** is ideal for fabric-first design. The board can help to achieve a 0.18W/m²K U-value within a 100mm cavity depending on block selection and internal finish. Please consult our technical department for further information.

Technical Support

To help you find the best insulation products for your project – and comply with building regulations – our dedicated technical team can provide you with U-value calculations, condensation risk analysis and advice on installation.

Our team is focused on helping specifiers in particular specialist areas, details of which can be found at **recticelinsulation.co.uk**

Fabric First

Concentrate on getting a building's fabric right and each element - whether a floor, wall or roof - will be well-built, thermally efficient and airtight, achieving the designed level of performance for the life of the building. At Recticel, we advocate 'fabric first' as the best way to reduce energy consumption.

Sharing aspects of the Passivhaus comfort standard, a fabric first approach concentrates on high levels of thermal performance and airtightness (including from doors and windows), and reduced thermal bridging. Air quality is also a vital part of the building specification to ensure occupant comfort and health, so the correct ventilation strategy needs to be considered - possibly requiring mechanical ventilation with heat recovery (MVHR). When it comes to the insulation specification, we'll recommend the right thickness of PIR to meet your requirements in the most efficient manner possible.

The Performance Gap

While new buildings might meet thermal regulations on paper, the actual performance level once occupied can be well below expectations. Although we can advise on the theoretical performance of our products in particular building elements, we still rely on contractors and site supervisors to make sure they perform as intended – so we're committed to providing more information and improving knowledge about the installation of our products.



Thermal Bridging Models

Linear thermal transmittance (or psi value) is a measure of heat loss at junctions. In order to minimise this, it is necessary to ensure continuity of the insulation layer across adjacent building elements. This means careful detailing of junctions between elements and openings to reduce thermal bridging. For example; between wall and roof, wall and floor, lintel and wall.

Why is it important to consider thermal bridging details?

Recent changes to building regulations have resulted in lower U-value requirements for the main construction elements.
As thermal transmittance through these elements reduces, heat energy seeks to escape by the path of least resistance, normally through inadequately insulated junctions. Heat loss at junctions can account for up to 15% of a building's total heat loss.

An additional benefit of minimising thermal bridging is reducing the risk of surface condensation and associated mildew at otherwise cold spots, and thereby improving occupant health.

Recticel Insulation's range of thermal bridging details can assist designers with psi values for use in SAP calculations to ensure that carbon emissions and fabric energy efficiency targets of the latest building regulations are achieved, or even exceeded.

Contact our Technical Experts on **0800 085 4079** or email **technicalservices@recticel.com** for enquiries or support.

Technical Library

Scan here to view installation guidance and best practice via our specification guides and BBA certification.





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