



The road to Net-Zero

V2



Part L

(ENGLAND & WALES)

Section 6

(SCOTLAND)

The Future Homes / Future Buildings Standards 2025

(ENGLAND)

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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 homes¹. 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% fewer 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

¹Fabric 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 emissions 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
Heating Appliance	Gas Boiler	Gas Boiler	Low-Carbon Heating (e.g. Heat Pump)
Air Permeability at 50 Pa	5.0 m3/(h.m2)	5.0 m3/(h.m2)	5.0 m3/(h.m2)
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

¹Fabric 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 received after February 1st, 2023. 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 (2023)				
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
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	0.15
Wall	0.17	0.22	0.17	0.17
Flat Roof	0.11	0.18	0.13	0.13
Pitched Roof (Slope)	0.11	0.18	0.13	0.13
Pitched Roof (Horizontal Ceiling)	0.11	0.15	0.11	0.11

¹Notional Dwelling could be used as a best starting point



Walls: Specification Guidance

Recticel has a wide range of PIR insulation solutions to meet best-starting-point for new and existing buildings' U-value targets for walls of all design. For full-fill cavity walls, the good thermal properties of innovative systems such as Eurowall® + (0.022 W/m2K) helps attain current energy standards.

The rigid full-fill insulation board features a tongue-and-groove joint on all four edges, making it capable of achieving a U-value of 0.18 W/m2K in a traditional 100mm masonry cavity wall. 90mm Eurowall® +, when installed within a 100mm masonry cavity wall, means the required 10mm cavity is maintained and traditional bricklaying methods can be followed. In respect of new UK regulations for cavity walls, England has a notional dwelling best starting point target of 0.18 Wm2K for walls; Wales: 0.13 Wm2K; Scotland: 0.15 W/m2K.

The U-value targets fall between the notional dwelling and limiting value therefore with the SAP and SBEM approach this gives users flexibility in elemental design. In terms of existing buildings and extensions, these contain separate fixed targets. Hence, with a U-value of 0.18 W/m2K for England and Wales, and 0.17 W/m2K required for Scotland, a 90mm or 115mm Eurowall® + panel may be suitable.

	New Build Best Starting Point	Existing Builds and Extensions
Part L England	90mm to 115mm	90mm to 115mm
Part L Wales	90mm to 140mm	90mm to 115mm
Section 6 Scotland	90mm to 140mm	90mm to 115mm

* Please note, a 10mm clear cavity must be maintained during construction

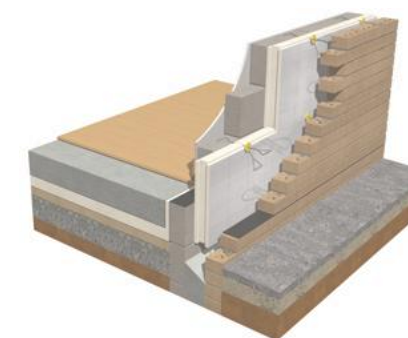
eurothane gp

For masonry cavity wall application, brick and block selection and proposed internal finish will dictate the thickness of Eurowall® + required. 0.18 W/m2K can be achieved with standard brick and block construction, providing the internal finish is plasterboard-on-dab and the inner leaf block has a thermal conductivity of 0.18 W/mK or better.

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

Brick and Block Cavity Wall

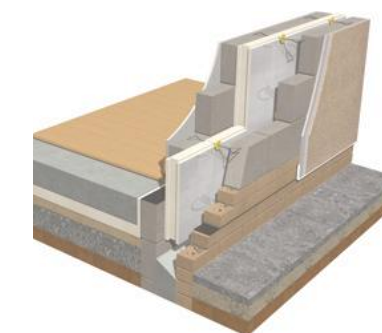
- ▶ 102.5mm outer leaf brickwork
- ▶ Low emissivity unvented cavity, 10mm
- ▶ Recticel Eurowall® +, thickness as indicated
- ▶ Recticel Eurowall® +, thickness as indicated
- ▶ 100mm inner leaf concrete blockwork, thermal conductivity as indicated
- ▶ Plasterboard on dabs



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
140	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
- ▶ 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



Calculate your U-value

Click here to find out your building's elemental thermal performance via our U-value calculator.



Technical Library

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Click here to find out more about EuroWall® + and download technical specifications.

eurowall cavity

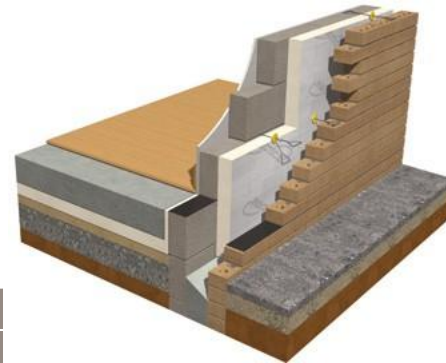
Partial-Fill Cavity Wall

Eurowall® Cavity is a specialist solution for cavity walls, with precision-cut straight edges to ensure gaps between boards are kept to a minimum. Durable, with a good thermal performance of 0.022/mK, Eurowall® Cavity has a low emissivity facing which delivers improved thermal resistance within a clear cavity. England regulations give a new-build best starting point of at least 80mm thickness for partial fill cavity wall applications.

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
- ▶ Recticel **Eurowall® Cavity**, 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
50	0.24	0.25	0.26	0.28	0.28	0.29
60	0.22	0.23	0.24	0.25	0.25	0.25
70	0.20	0.21	0.21	0.22	0.22	0.23
75	0.19	0.20	0.20	0.21	0.21	0.22
80	0.18	0.19	0.19	0.20	0.20	0.21
90	0.17	0.17	0.18	0.19	0.19	0.19
100	0.16	0.16	0.17	0.17	0.17	0.17

Rendered Dense Block and Block Cavity Wall

- ▶ 19mm render
- ▶ 100mm outer leaf blockwork, dense (1.13 W/mK thermal conductivity)
- ▶ Low emissivity unvented cavity
- ▶ Recticel Eurowall® Cavity, thickness as indicated
- ▶ 100mm inner leaf concrete blockwork, thermal conductivity as indicated



Insulation Thickness (mm)	Inner Leaf Block Thermal Conductivity (W/mK)					
	0.11	0.15	0.22	0.47	0.59	1.13
50	0.24	0.25	0.26	0.28	0.28	0.29
60	0.22	0.23	0.24	0.25	0.25	0.25
70	0.20	0.21	0.21	0.22	0.22	0.23
75	0.19	0.20	0.20	0.21	0.21	0.22
80	0.18	0.19	0.19	0.20	0.20	0.21
90	0.17	0.17	0.18	0.19	0.19	0.19
10	0.16	0.16	0.17	0.17	0.17	0.17

Flat Roofs: Specification Guidance

Part L amendments to U-value requirements for flat roofs has particular relevance to PIR insulation, which is widely used for this type of application as part of a waterproofing build-up.

To facilitate improved thermal performance, in order to achieve regulation compliance would generally require thicker insulation. But in flat roof applications and terraces where upstand height restrictions present a challenge, it requires a PIR system that demonstrates good thermal performance without compromise to its thickness.

Recticel's Powerdeck F, Powerdeck U and Eurodeck are PIR products designed to support the attainment of flat roof U-Value targets. Each product displays good compressive

strength and dimensional stability in providing the required flat roof finish.

A bespoke Vacuum Insulation Panel, Deck VQ delivers a thermal performance of 0.008 - 0.009 W/mK, whilst its VIP core provides a Lambda value of 0.006 W/mK. It makes the panel fit for a wide range of flat-roof and terrace applications where insulation build-up thickness is an issue.



Calculate your U-value

Click here to find out your building's elemental thermal performance via our U-value calculator.



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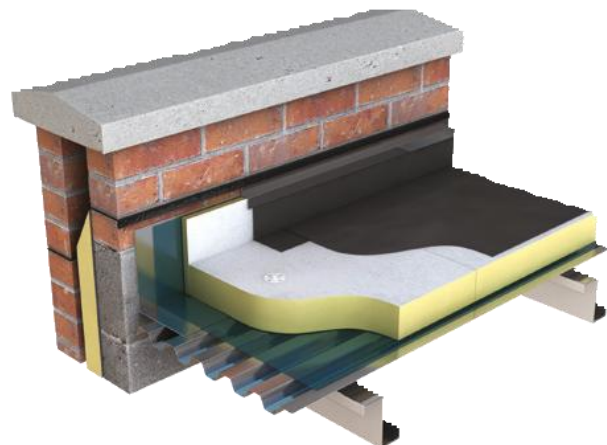
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Eurowall® Cavity

Click here to find out more about Eurowall® Cavity and download technical specifications.

powerdeck f

Powerdeck® F is a flat roof insulation board for built-up felt and single-ply membrane waterproofing systems. The tables highlight an insulation thickness of between 210mm and 250mm to achieve best starting point levels in UK new-builds, and between 150mm and 200mm for existing properties and extensions.





Powerdeck® F Starting Point for New Build – Notional Dwelling


Product Thickness (mm)	Timber Deck		Metal and Concrete Deck	
	Ceiling (W/m²K)	No Ceiling (W/m²K)	Ceiling (W/m²K)	No Ceiling (W/m²K)
210 (120+90)	0.11	0.11	0.11	0.11
220 (120+100)	0.10	0.11	0.11	0.11
230 (130+100)	0.10	0.10	0.10	0.10
240 (120+120)	0.10	0.10	0.10	0.10

Powerdeck® F for New Elements on Existing Dwellings (extensions etc)

Product Thickness (mm)	Timber Deck		Metal and Concrete Deck	
	Ceiling (W/m²K)	No Ceiling (W/m²K)	Ceiling (W/m²K)	No Ceiling (W/m²K)
150	0.15	0.15	0.15	0.16
160 (80+80)	0.14	0.15	0.15	0.15
165 (90+75)	0.14	0.15	0.14	0.15
170 (90+80)	0.14	0.14	0.14	0.14
180 (90+90)	0.13	0.13	0.13	0.14
190 (100+90)	0.12	0.13	0.13	0.13
200 (100+100)	0.12	0.12	0.12	0.12

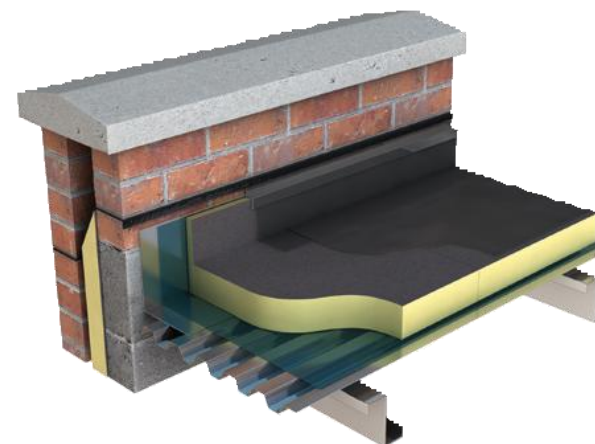
 **Calculate your U-value**
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 **Powerdeck® F**
Click here to find out more about Powerdeck® F and download technical specifications.

powerdeck u

Powerdeck® U is a flat roof insulation for bituminous torch-on felt waterproofing systems. The tables highlight, an insulation thickness of between 210mm and 250mm to achieve best starting point levels in UK new-builds, and between 150mm and 200mm for existing properties and extensions.





Powerdeck® U Starting Point for New Build – Notional Dwelling


Product Thickness (mm)	Timber Deck		Metal and Concrete Deck	
	Ceiling (W/m²K)	No Ceiling (W/m²K)	Ceiling (W/m²K)	No Ceiling (W/m²K)
210 (120+90)	0.11	0.11	0.11	0.11
220 (120+100)	0.10	0.11	0.11	0.11
230 (130+100)	0.10	0.10	0.10	0.10
240 (120+120)	0.10	0.10	0.10	0.10

Powerdeck® U for New Elements on Existing Dwellings (extensions etc)

Product Thickness (mm)	Timber Deck		Metal and Concrete Deck	
	Ceiling (W/m²K)	No Ceiling (W/m²K)	Ceiling (W/m²K)	No Ceiling (W/m²K)
150	0.15	0.15	0.15	0.16
160 (80+80)	0.14	0.15	0.15	0.15
165 (90+75)	0.14	0.15	0.14	0.15
170 (90+80)	0.14	0.14	0.14	0.14
180 (90+90)	0.13	0.13	0.13	0.14
190 (100+90)	0.12	0.13	0.13	0.13
200 (100+100)	0.12	0.12	0.12	0.12

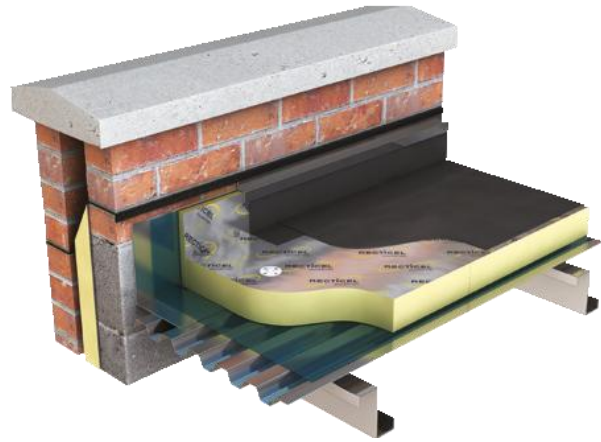
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 **Powerdeck® U**
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eurothane eurodeck

Eurothane® Eurodeck is compatible with mechanically-fixed, single-ply waterproofing systems. This excellent thermal insulation board offers a consistent lambda value (0.022 W/m²K). BBA certified, Eurothane® Eurodeck ensures a superbly-flat surface finish in new-build and refurbishment projects.



Eurothane® Eurodeck Starting Point for New Build – Notional Dwelling

Product Thickness (mm)	Timber Deck		Metal and Concrete Deck	
	Ceiling (W/m ² K)	No Ceiling (W/m ² K)	Ceiling (W/m ² K)	No Ceiling (W/m ² K)
180 (90+90)	0.11	0.12	0.12	0.12
190 (100+90)	0.11	0.11	0.11	0.11
200 (100+100)	0.10	0.11	0.11	0.11
210 (120+90)	0.10	0.10	0.10	0.10
220 (120+100)	0.10	0.10	0.10	0.10
230 (130+100)	0.09	0.09	0.09	0.09
240 (120+120)	0.09	0.09	0.09	0.09

Eurothane® Eurodeck for New Elements on Existing Dwellings (extensions etc).

Product Thickness (mm)	Timber Deck		Metal and Concrete Deck	
	Ceiling (W/m ² K)	No Ceiling (W/m ² K)	Ceiling (W/m ² K)	No Ceiling (W/m ² K)
140	0.15	0.15	0.15	0.15
150	0.14	0.14	0.14	0.14
160 (80+80)	0.13	0.13	0.13	0.13
165 (90+75)	0.12	0.13	0.13	0.13
170 (90+80)	0.12	0.13	0.12	0.13
180 (90+90)	0.11	0.12	0.12	0.12



Calculate your U-value

Click here to find out your building's elemental thermal performance via our U-value calculator.



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Eurothane Eurodeck

Click here to find out more about Eurothane® Eurodeck and download technical specifications.

eurothane gp

Eurothane® GP is a specialist PIR Solution. This multi-purpose product is for use in pitched roofs, ceilings, lofts, internal walls and floors. Eurothane® GP boards offers a thermal performance of: $\lambda = 0.022 \text{ W/mK}$.

Due to the board's multi-purpose properties, its performance outcomes vary depending on the application.

To access all relevant literature relating to Eurothane GP or if you want to calculate your U-Value, click on the buttons below. Alternatively, contact Recticel Technical Department to discuss any queries on Eurothane GP:

Technical Freephone: **0800 0854079** | technicalservices@recticel.com



Calculate your U-value

Click here to find out your building's elemental thermal performance via our U-value calculator.



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Eurothane GP

Click here to find out more about Eurothane® GP and download technical specifications.

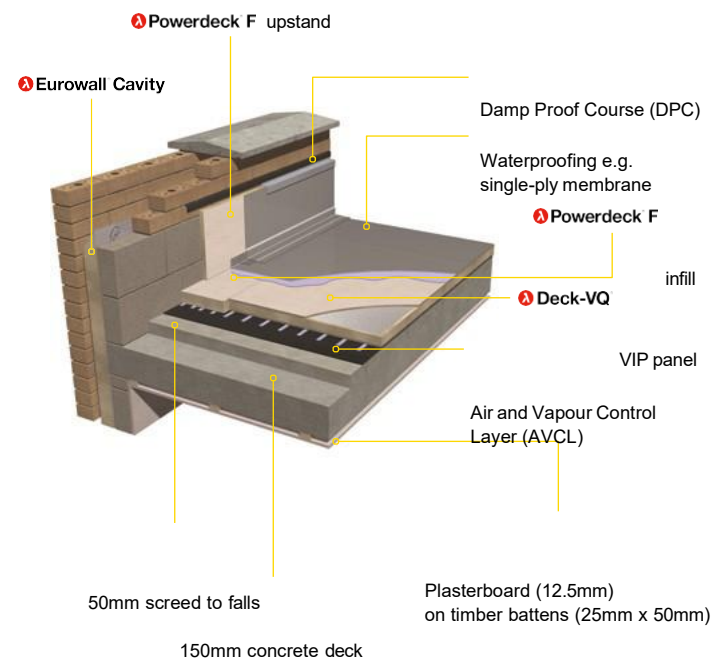
deck-vq

Deck-VQ® is compatible with adhered single-ply membranes and bituminous systems, meaning it can be used with existing construction technologies. Deck-VQ® is manufactured by Gradient, Recticel's tapered insulation division. Gradient's technical teams are able to provide a bespoke project-specific layout to ensure the insulation fits before it arrives on site.

Tables below should be used for guidance please contact sales@gradientuk.com for more details on specific project requirements.¹

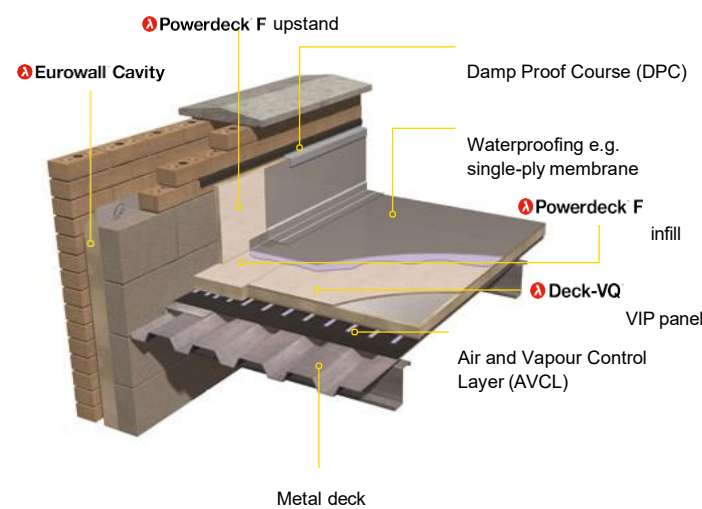
Concrete Deck

U-Value W/m²K	Deck-VQ Thickness (mm)	Powerdeck F Overlay Thickness (mm)	Total Insulation Thickness (mm)
0.18	60mm	N/A	60mm
0.16	45mm	60mm	105mm
0.15	60mm	30mm	90mm
0.13	60mm	50mm	110mm
0.12	60mm	60mm	120mm
0.11	60mm	80mm	140mm
0.11	60mm + 45mm	N/A	105mm
0.09	60mm + 60mm	N/A	120mm
0.08	60mm + 60mm	30mm	150mm
0.08	60mm + 60mm	70mm	190mm



Metal Deck (no ceiling)

U-Value W/m²K	Deck-VQ Thickness (mm)	Powerdeck F Overlay Thickness (mm)	Total Insulation Thickness (mm)
0.18	45mm	40mm	85mm
0.16	60mm	20mm	80mm
0.15	60mm	30mm	90mm
0.14	60mm	40mm	100mm
0.13	45mm + 45mm	N/A	90mm
0.12	60mm	70mm	130mm
0.11	60mm	80mm	140mm
0.11	60mm + 45mm	N/A	105mm
0.10	60mm	100mm	160mm
0.09	60mm + 60mm	N/A	120mm
0.08	60mm + 60mm	30mm	150mm



GRADIENT

Contact Gradient's technical helpline on 01543 678777 or email sales at: sales@gradientuk.com



Technical Library

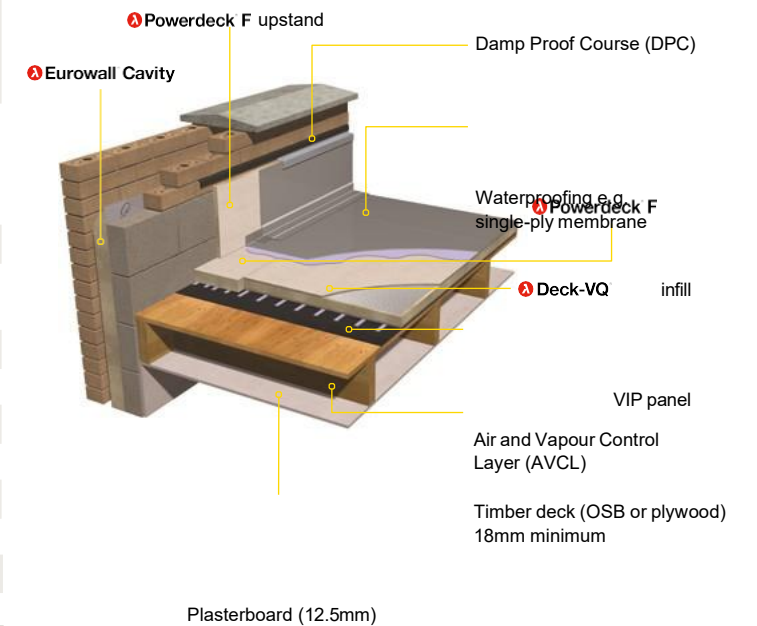
Click here to view installation guidance and best practice via our specification guides and BBA certification.



Click here to find out more about Deck-VQ® and download technical specifications.

Timber Deck

U-Value W/m²K	Deck-VQ Thickness (mm)	Powerdeck F Overlay Thickness (mm)	Total Insulation Thickness (mm)
0.18	45mm	30mm	75mm
0.17	60mm	N/A	60mm
0.15	60mm	20mm	80mm
0.14	60mm	30mm	90mm
0.13	60mm	40mm	100mm
0.12	45mm	100mm	145mm
0.11	60mm	80mm	140mm
0.11	60mm + 45mm	N/A	105mm
0.10	60mm	90mm	150mm
0.09	60mm + 60mm	N/A	120mm
0.08	60mm + 60mm	30mm	150mm



- ▶ Deck-VQ 45mm – 0.009W/mK
- ▶ Deck-VQ 60mm – 0.008W/mK
- ▶ Powerdeck F – (≥ 120mm = 0.024W/mK, 80mm – 119mm = 0.025W/mK, ≤ 79mm = 0.026W/mK)

The above guide U-values have been calculated using Deck-VQ 45mm and 60mm (stock items). Other thicknesses are available to suit your project requirements. Our technical team can work with you to determine the optimum thickness which is required

Guide U-values shown assume a 20% bridging factor of PIR infill against Deck-VQ. For an accurate bridging percentage, project details will be required, where our technical team can calculate the exact bridging factor and resultant U-value achieved



FAQs

What is the U-value target for my new-build wall, floor, roof etc? (SAP / SBEM or notional dwelling specification)

There are no specific targets for new-build applications, unless you are following the notional dwelling specification in its entirety. Generally, we use this as a starting point in the absence of further information. U-values can be offset as long as they are no lower than the limiting/backstop values. Therefore, we are unable to give definitive answers in terms of targets. So, the best option is to engage with an energy/SAP or SBEM assessor at a project's earliest stage, as this will help to set realistic U-value targets for each elemental detail.

Which regulatory targets do I need to follow for my extension/renovation (transitional arrangements)?

In most cases it will be the latest regulatory targets, unless plans/alterations have been agreed and commenced. It is always advisable to double check and discuss any issues with building control.

Psi-values: What are they and are they important?

Psi-values measure heat loss at junctions within a building, hence they are an important aspect of the design process. As part of the measurement practice, Psi-values are inputted into Standard Assessment Procedure (SAP) software in order to ascertain heat loss levels.

Previously, SAP assessors had the option to use Psi- value calculations from government-approved Accredited Construction Details (ACDs) – a pre-set list of standardised details, based on different types of thermal element and junction. These have been removed from the latest version of the SAP method, outlined in the Part L amendments, to encourage more accuracy and less reliance on assumptions and default data. The replacement of ACDs means manufacturer-supplied PSI values and other recognized construction details provide more accurate indication in terms of heat loss measurement.

What materials will I need to achieve lower U-value targets?

With impressive lambda values as low as 0.022 W/mK, PIR insulation offers users the benefit of excellent thermal performance and quality in relation to cost. This composition allows for space-saving, requiring less thickness to achieve the same U-value as other insulation materials. This benefit is particularly valuable for housebuilders seeking to maximise interior living space and plots per area in multi-property developments. PIR insulation is also highly adaptable and suitable for various applications, including floors, walls, pitched roofs and flat roofs.

What defines a side lit building?

In side lit buildings, typically places such as offices and retail outlets, the primary light source derives from the side of a structure. With windows and doors a conduit for side lit buildings, additional heating is generally required in side lit spaces to compensate for diminished natural light source.

What defines a top lit building?

Top lit' buildings are generally taller structures, such as warehouses, sports halls and industrial spaces, that contain roof lights. In these buildings, where there is a prevalence of mortorised machinery and equipment, comfort heating is generally set at a much lower level than side lit buildings.






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