Babergh and Mid Suffolk
Building Control

Building Regulations 2022 Update
Extensions and Alterations Guidance

This guide has been produced to explain the changes coming into the Building Regulations on applications received on or after 15th June 2022. The guide provides details on the key changes along with examples of how compliance can be achieved when working on existing dwellings (extensions, renovations, etc).

For applications submitted before 15th June 2022 and provided work is commenced before 15th June 2023 the current Building Regulation requirements will be applicable. A commencement for this purpose would be either foundations or drains in connection with the work specified on the application.

Please do not hesitate to contact us should you have any questions, and we look forward to working with you on your projects.

Paul Hughes – Corporate Manager, Building Control

Working in association with:

Suffolk Building Control Group

LABC

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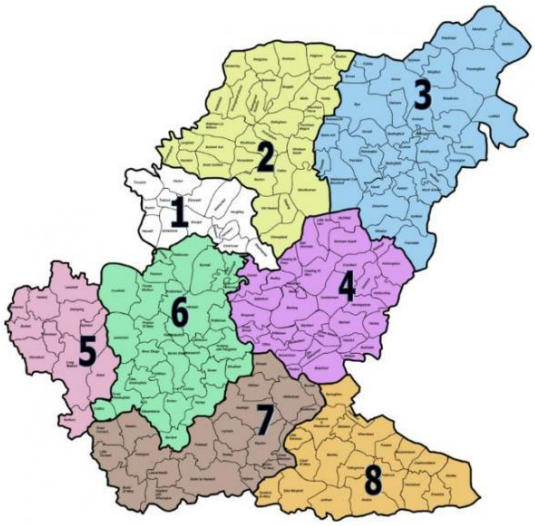
For inspection requests, please call 01449 724512 or use the LABC 'Inspection App';
to guarantee next day inspection please book **by 4 pm** the day before.



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Summary of changes to Approved Document F & L as of June 2022

Approved Document F – Extensions & Alterations noteworthy changes

- Night latches cannot be used in place of trickle vents. (Part F: Paragraph 1.52)
- Open plan kitchen diners need a minimum of 3 trickle vents in a room (8000mm^2 each). (Part F: Paragraph 1.52)
- Minimum requirement for trickle vents now 8000mm^2 for habitable rooms or 10,000mm^2 for single-storey dwellings. (Part F: Table 1.7)
- Exposed Façades in busy areas (main road etc) will require noise attenuating trickle vents. (Part F: Paragraph 1.54)
- Existing home ventilation guides are required to be given to the homeowner by the builder. (Explaining how to use and ventilate efficiently etc) (Part F: Paragraph 4.20 Part F)
- All replacement windows must have trickle vents regardless of whether the previous windows did. (Part F: Paragraph 3.15)
- Energy efficiency measures in existing homes means the ventilation of the dwelling must be assessed. Doing multiple minor works (Insulating lofts, replacing loft hatches etc.) or major work (bricking up chimneys, installing internal wall insulation etc.) will now require ventilation retrospectively and in some cases, you will require a ventilation report to specify new ventilation requirements. In most cases retrofitting trickle vents will be an adequate method. (Part F: Table 3.1, Paragraph 3.6-3.13)

Approved Document L – Extensions & Alterations noteworthy changes

- New thermal elements, replacement thermal elements and glazing need to meet new U-Values. (Part L: Table 4.2, Paragraph 4.7)
- Highly glazed extensions – max openings limited to 25% of the floor area of extension plus any existing covered still applies. If over SAP calculations or area weighted U value calculations are required, usually specifying a higher U-Value than Part L requires. Calculations are required before starting works. This also includes new glazing in existing buildings i.e., extending openings for Bi-folds etc. where exceeding 25% glazing of the total floor area of the dwelling. (Part L: Paragraph 10.10)
- Increases in efficiency requirements when replacing/extending existing heating systems (Part L: Section 6) i.e., minimum SEDBUK of 92%, enhanced controls, additional requirements for combi boilers.
- Renovating thermal elements still applies but with more clarification. Most U values stay the same however replacing a flat roof membrane will require insulation upgrades. (Part L: Paragraph 11.2)
- Exempt structures such as conservatories and porches under 30m^2 will no longer be exempt if heated by any fixed heating even if a separate system to the house is now deemed as controllable work. (Part L: Paragraph 0.14)

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U-Value Table highlighting changes as of June 2022

Note: New thermal elements may need higher values if you have more than 25% glazing.

Table A: U-Value

Thermal Element	Old U-Value	New U-Value
New Floors	0.22 W/m^{2}K	**0.18 W/m^{2}K**
Retained Floors	0.25 W/m^{2}K	**0.25 W/m^{2}K**
New Cavity Walls	0.28 W/m^{2}K	**0.18 W/m^{2}K**
Retained Cavity Walls	0.55 W/m^{2}K	**0.55 W/m^{2}K**
Retained Solid Walls 9”	0.3 W/m^{2}K	**0.3 W/m^{2}K**
Retained Single Skin Walls 4”	0.3 W/m^{2}K	**0.3 W/m^{2}K**
Timber Frame Walls	0.28 W/m^{2}K	**0.18 W/m^{2}K**
Pitched Roof (Flat Ceiling)	0.16 W/m^{2}K	**0.15 W/m^{2}K**
Pitched Roof (Vaulted Ceiling)	0.18 W/m^{2}K	**0.15 W/m^{2}K**
Flat Roof (Cold Deck)	0.18 W/m^{2}K	**0.15 W/m^{2}K**
Flat Roof (Warm Deck)	0.18 W/m^{2}K	**0.15 W/m^{2}K**
Retained Roof Upgrades Flat Roof Flat Ceiling Vaulted	 0.18 W/m^{2}K 0.16 W/m^{2}K 0.18 W/m^{2}K	 **0.16 W/m^{2}K** **0.16 W/m^{2}K** **0.18 W/m^{2}K**
Windows	1.6 W/m^{2}K	**1.4 W/m^{2}K**
External Doors >60% Glazing	1.8 W/m^{2}K Band E	**1.4 W/m^{2}K** **Band C**
Other External Doors	1.8 W/m^{2}K Band E	**1.4 W/m^{2}K** **Band B**
Roof Light	1.6 W/m^{2}K	**2.2 W/m^{2}K**

Ground Floor U-Value guidance: Extensions and Alterations

Below is a table of examples of insulation products that can be used to achieve the new U-Values in Approved Document L as of June 2022.

This is based upon traditional oversites and beam and block floors with a P/A ratio of 1, insulation thickness may be reduced if the P/A ratio is lower, but calculations may be required.

The values below will suffice in most circumstances, with insulation either above or below the concrete slab and in beam and block and floating floor scenarios.

It is now a requirement to provide a 25mm perimeter upstand of PIR insulation as standard, except floating floors.

Table B: Minimum U-Value now required 0.18W/m^{2}K

Product	Thickness
Celotex GA4000	100mm
Recticel Eurothane Gp	100mm
Jabfloor insulation	100mm + 60mm
Ecotherm Eco-Versal	100mm
Kingspan K103	100mm

Note: To offset additional glazing, PIR insulation thickness in the floor is more likely to be specified/required to be **150mm on most jobs**. This is because it may be more cost-effective than upping wall thickness etc. Timber floors may be better to insulate as a floating floor however for insulating between joists see examples below.

Table C: examples of suspended timber floor. Minimum U value now required 0.18W/m^{2}K

Option 1	Option 2
Celotex XR4000 150mm between 150mm Timber Joists at 400cc	Rockwool Flexi 200mm between timber joists. 200mm Joists required

Cavity Wall guidance: Extensions and Alterations

Cavity walls

Below are tables of examples of insulation products that can be used to achieve the new U-Values in Approved Document L as of June 2022.

This is based on a 'standard' cavity construction wall detail with a brick or medium dense block outer leaf and a lightweight block inner leaf with plasterboard on dabs.

In most instances, the overall wall width will be greater than 300mm unless a suitable PIR full-fill cavity insulation board is used.

Please see the key for ease - this includes some but not all products that can be used. Specialist advice from architects, energy assessors and manufacturers may be required.

Table D: U-Value now required 0.18W/m^{2}K

Cavity width	Detail
100mm	Suitable full fill insulation with thermal conductivity of **0.021 W/mK**, 100 blockwork inner leaf with thermal conductivity of **0.15 W/mK**
100mm	Full fill insulation with thermal conductivity of **0.032 W/mK**, 100 mm blockwork with thermal conductivity of **0.15 W/mK** 52.2 insulated PIR plasterboard finish (40mm PIR + 12.5mm plasterboard).
150mm	Full fill insulation with thermal conductivity of **0.032 W/mK**, 100 mm blockwork with thermal conductivity of **0.15 W/mK**
150 mm	Partial fill 100mm insulation with thermal conductivity **0.022 W/mK**, 100 mm blockwork with thermal conductivity of **0.15 W/mK**
150mm	Full fill insulation of thermal conductivity **0.037 W/mK** 100 mm blockwork with thermal conductivity of **0.15 W/mK** 10mm PIR insulation **0.022 W/mK** internally
180mm	Full fill insulation of thermal conductivity **0.037 W/mK**, 100mm blockwork inner leaf with a thermal conductivity up to **1.130 W/mK** (dense concrete block)

Table E: Key for common construction products used

0.15W/mK blocks or better	Cavity insulation 0.02 W/mK	Cavity insulation 0.032 W/mK	Cavity insulation 0.037 W/mK
Celcon Solar Celcon Standard Durox Supablock Durox SupaBlock 400 Thermalite shield Thermalite Turbo Topblok supa bloc Toplite standard	Recticel Euro wall Celotex CW4000 All will be PIR partial/full fill cavity wall systems and workmanship will need to be impeccable	Dritherm 32 Cavity Batts Please note most other cavity wall insulations do not achieve the same value as Dritherm 32, even other Dritherm products like 34 etc.	Rockwool Cavity batts Other Dritherm products

Note: Denser blocks are sometimes required for structural stability, this will have a negative effect on the U-Value and will subsequently require insulation upgrades.

Timber-framed wall U-Value guidance: Extensions and Alterations

Timber frame wall

Below is a table of examples of insulation products that can be used to achieve the new U-Values in Approved Document L as of June 2022.

This is based on any façade detailing (brick outer leaf, blockwork rendered, hanging tiles, timber or cement cladding or rendered cement board). With brick or rendered block façade, a better U-Value can typically be achieved but this will need site-specific calculations. All assume a 12.5mm plasterboard internal finish.

Additional allowance in overall construction thickness may be required to accommodate a service void.

Table F: Minimum U value now required 0.18W/m^{2}K

Product	100mm X 47mm, 600cc studs (4x2 inch timbers)	150mm x 47mm, 600cc (6x2 inch timbers)	200 x 47mm, 600cc (8x2 inch timbers)
Kingspan Kooltherm K12	70mm between studs + 40mm over	100mm between studs + 25mm over	Follow 150mm x 47mm guidance
Celotex GA4000 + TB4000	100mm GA4000 between + 50 mm over	100mm GA4000 between + 40 mm TB4000 over	100mm GA4000 between + 30 mm TB4000 over
Recticel Eurothane GP	100mm between + 50 mm over	100mm between + 40 mm over,12.5mm plasterboard Or 150mm between + 25mm over	100mm between + 30mm over
Ecotherm Eco-Versal	80mm between + 40mm over	100mm between + 30mm over	See 150mm X 47mm guidance
Actis hybris + Actis Hcontrol (Acts as a vapour control barrier also when taped.)	N/A	105mm of Hybris Actis between studs + 45mm HControl Hybrid quilt lining, counter battened	See 150mm x 47mm Guidance
Mineral wool – thermal conductivity 0.032	100mm between + 60mm PIR over	140mm between + 40mm PIR over	200mm between + 15mm PIR over

Flat roof U-Value guidance: Extensions and Alterations

Warm deck roof

Below is a table of examples of insulation products that can be used to achieve the new U-Values in Approved Document L as of June 2022.
This is based on a traditional warm deck build up with all insulation above the flat roof joists which negates the ventilation requirements.

Table G: Minimum U value now required 0.15W/m^{2}K

Product	Thickness
PIR insulation with thermal conductivity of 0.022	140mm

Cold deck roof

Below is a table of examples of insulation products that can be used to achieve the new U-Values in Approved Document L as of June 2022.

This is based on a traditional cold deck build-up of insulation between and below the flat roof joists, plasterboard internally. This solution will require adequate cross flow ventilation. Cold decks are not ideal and warm decks are preferred.

The table below assumes 150mmx47mm joists with a 50mm ventilation void.

Table H: Minimum U value now required 0.15W/m^{2}K

Product	**Joists at 600 centres**	**Joists at 450 centres**	**Joists at 400 centres**
Kingspan Kooltherm K7	100mm between joists + 50mm under	Follow 600cc guidance	Follow 600cc Guidance
Celotex GA4000	100mm between joists + 60mm under	100mm Between joists + 70mm under	Follow 450cc guidance
Recticel Eurothane GP	100mm between joists + 70mm under	Follow 600cc guidance	100mm Between joists + 75mm under
Ecotherm Eco-Versal	100mm between joists + 60mm under	100mm between joist + 70mm under	Follow 450cc guidance
Mineral wool – 0.040 thermal conductivity	100mm between + 90mm PIR under	Follow 600cc guidance	Follow 600cc guidance

Pitched roof U-Value guidance: Extensions and Alterations

Vaulted Ceilings

Below is a table of examples of insulation products that can be used to achieve the new U-Values in Approved Document L as of June 2022.

The table below assumes, as an example, 150mmx47mm rafters with a 50mm ventilation void, thermal values will suffice in most circumstances.
This is based on a pitched roof with a vaulted ceiling (no ceiling joists installed) and a plasterboard finish.

Table I: Minimum U value now required 0.15W/m^{2}K

Product	Rafters at 600mm cc	Rafters at 450mm cc	Rafters at 400mm cc
Kingspan Kooltherm K7	100 mm between rafters + 45mm under	Follow 400 cc guidance	100 mm between rafters + 50mm under
Celotex GA4000	100 mm between rafters + 50mm under	100 mm between rafters + 60mm under	Follow 450cc guidance
Recticel Eurothane GP	100 mm between rafters + 60mm under	Follow 400 cc Guidance	Follow 600cc Guidance
Ecotherm Eco-Versal	100 mm between rafters + 50mm under	Follow 400cc Guidance	100 mm between rafters +60mm under
Other options are indicative only. Minimum U-value now required 0.15W/m^{2}K			
Celotex GA4000 between and over rafters		75mm between rafters and 75mm over rafters at 400cc. Full design should be sought with condensation risk analysis, not all PIR manufacturers will allow this.	
Celotex XR4000 over rafters		140mm over rafters	
TLX Silver with PIR insulation between		120mm of PIR between with TLX silver underneath. Air gaps, timber size and design to be discussed	
TLX Gold with PIR insulation between		145mm PIR between, TLX gold above rafter, design to be discussed.	

Flat Ceilings

Below is a table of examples of insulation products that can be used to achieve the new U-Values in Approved Document L as of June 2022.

This assumes all insulation is laid between and over the ceiling joists.
This is based on a pitched roof construction with a flat ceiling, 147x47mm ceiling joists installed at 600cc and plasterboard finish.

Table J: Minimum U-value now required 0.15W/m^{2}K

Product	Thickness/installation
Knauf - glass mineral wool	150mm insulation between ceiling joists, 150mm laid perpendicular over the top, 300mm total
Rockwool – Thermal insulation loft roll	150mm insulation between ceiling joists, 150mm laid perpendicular over the top, 300mm total
Celotex GA4000 (Other PIR insulations options may differ slightly)	100mm insulation between joists and 60mm under
Actis Multifoils	HYBRIS 140mm thickness between joists + HCONTROL HYBRID 45mm underneath with relevant air gaps

Disclaimer

Babergh and Mid Suffolk District Councils have no affiliations with manufacturers and remain completely impartial. The designer takes accountability for use of this document, and we may require additional calculations as appropriate. You may choose different insulation types/brands as you see fit provided, they are appropriate for use and meet the regulations.

Where any change to a specification is proposed the architect, energy assessor, etc… should be consulted before making any changes and the building control body notified. Where required/desired manufacturers or designers' guidance / U value calculations can be sought for more cost-effective solutions.

We intend to publish more specific guidance regarding new dwellings soon, guidance on vehicle charging points and overheating, as well as greater clarification on heating existing buildings/extensions in due course.

We urge all our customers to make clients aware of these upcoming changes as they may have an impact on material lead times and cost. Please feel free to contact your normal officer or any member of the team to discuss upcoming changes.

Quick Reference Link

EASTSUFFOLK COUNCIL
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With thanks to East Suffolk Council

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