

**Building Control
Guidance Note
15**

**Conservation of fuel and power
Work in existing dwellings**

Approved Document L1B



**Building Control
South Northamptonshire Council
Springfields, Towcester, Northants, NN12 6AE
Phone: 01327 32240**

With effect from **6th April 2006** ways of meeting the requirements of L1 for the following types of work- extensions, change of use to create a dwelling(s), material alterations to dwellings, provision of a controlled service or fitting, provision or renovation of a thermal element - are outlined in sections 1 to 5 below.

1. Extensions

Table 1 U values (w/m²K):

	(a) New elements	(b) Replacement elements
Wall	0.30	0.35
Pitched roof insulation at ceiling level	0.16	0.16
Pitched roof insulation between rafters	0.20	0.20
Flat roof	0.20	0.25
Floors	0.20	0.25
Windows and rooflights (draught proofed)	1.8 or window energy rating Band D or centre pane U of 1.2	2.0 or window energy rating Band E or centre pane U of 1.2
Doors (>50% glazed) (draught proofed)	2.2	2.2
Others doors (draught proofed)	3.0	3.0

The area of windows, roof lights and doors should not exceed 25% of the floor area of the extension plus the area of any existing windows, etc that are covered over by the extension.

Permitted design flexibility - The U values can be varied providing the area weighted U value of all elements in an extension is no greater than that of an extension of the same size and shape that meets the Table 1 U values and the U value of any element is no worse than those in Table 2:

Table 2 U values (W/m²K):	
Wall	0.70
Roof	0.70
Floor	0.35
Windows, etc	3.3

OR alternatively, use SAP 2005 to show that the CO₂ emission rate from the dwelling with the extension is no greater than for the dwelling plus a notional extension having the U values in Table 1. Where it is necessary to upgrade parts of the existing dwelling the U value should be as Table 1.

Conservatories over 30 m²

- Separating walls, doors and windows to be insulated and weather sealed to at least the same extent as the existing dwelling
- Independent temperature controls and on/off controls to heating system
- U value of any glazed elements and opaque elements, i.e. walls to be no worse than column (b) of Table 1

2. Change of use

- Provision or extension of a controlled service or fitting - **refer to section 4**
- Provision of thermal elements - **see Table 1**, limit air leakage and thermal bridges by adopting accredited details or follow guidance in BRE IP 17/01
- Renovation of thermal elements - **see section 5**
- Retained thermal elements - upgrade elements whose U value is worse than column (a) of Table 3 to U value given in column (b) if technically, functionally and economically feasible to do so (see 5b) **OR**,
- Where greater design flexibility is desired use whole building calculation, i.e. SAP 2005, to show CO₂ emissions from the building will not be greater than if 2a, 2b, 2c or 2d had been followed.

3. Material alterations

- a) Substantially replacing a thermal element - **as 2b**
- b) Renovation of thermal elements - **see section 5**
- c) Existing element becomes part of the thermal envelope where previously it was not - **as 2d**
- d) Provision or extension of a controlled fitting - **see 4a**
- e) Provision or extension of a controlled service - **see 4b**

4. Provision of a controlled service or fitting

- a) Area weighted average U value of windows, doors or rooflights - **see Table 1**
- b) New heating and hot water systems:
 - Energy efficiency of appliance and system controls to be in accordance with Domestic Heating Compliance (DHC) Guide 2006, and
 - The energy efficiency of replacement appliances to be no worse than 2 percentage points lower than the controlled service being replaced
 - System to be commissioned and a notice confirming that all fixed building services have been commissioned to be submitted to the local authority not more than 5 days after the completion of work (notice to include declaration signed by a suitably qualified person) (Reg. 20C).
- c) Insulation of ducts and vessels to be in accordance with DHC Guide
- d) Fixed air conditioners to be at least class C energy rating (Sch. 3 of The Energy Information Regs 2005)
- e) Fixed internal light fittings that only take lamps having a luminous efficacy greater than 40 lumens/circuit watt in most frequented locations to following ratio i) 1 per 25m² of floor area (exclude garages) **OR** ii) 1 per 4 fixed fittings (fluorescent fittings OK, GLS tungsten lamps with bayonet cap or Edison screw bases or tungsten halogen lamps not OK). A lighting fitting may contain 1 or more lamps.
- f) Fixed external lighting - i) lamp capacity not to exceed 150w per fitting; lighting to automatically switch off when there is enough daylight **AND** when not needed at night **OR** ii) fittings that only take lamps having a luminous efficacy greater than 40 lumens/circuit watt

5. Provision or renovation of a thermal element

- a) Regulation 4A(1) requires that work to renovate an existing thermal element - walls, floors and roofs - will need to be improve the energy efficiency of the element - **see Table 3**

Table 3 – Improving elements U values (W/m²K):

	a) Threshold value	b) Improve value
Cavity wall suitable for cavity wall insulation	0.70	0.55
Other wall type	0.70	0.35
Floor	0.70	0.25
Pitched roof, insulation at ceiling level	0.35	0.16
Pitched roof, insulation between rafters	0.35	0.20
Flat roof	0.35	0.25

- b) If such an upgrade is not technically or functionally feasible or would not achieve a simple payback of 15 years or less the best achievable standard will be acceptable (guidance on payback periods/situations are given in Appendix A of Approved Document L1B)

Walls, floors and roofs should meet the U values in column (b) only where **more than 25% of the surface area** of the element is being renovated

Examples of where a lesser value to that shown in column (b) may be acceptable include where the usable floor area is reduced by more than 5% or difficulties with adjoining floor levels may be created due to the thickness of insulation

Regulation 4A(2) requires that the replacement of an existing element must be reasonably energy efficient see column (b) of Table 1 for suitable U value

Renovation means the provision of a new physical layer or the replacement of an existing layer in a thermal element, but excludes paintwork and decoration

Work to buildings of historic or architectural value

Special considerations apply if the building work is carried to these types of building. The aim should be to improve the energy efficiency where practically possible providing that the work does not prejudice the character or cause long-term deterioration of the building. In arriving at a balance between conservation and energy efficiency it would be appropriate to take account of the advice of the council's conservation officer

Approved Document L1B and the DHC Guide can be found online at www.odpm.gov.uk