

**Building Control
Guidance Note
14**

**NEW DWELLINGS
(HOUSES/APARTMENTS/FLATS/MAISONNETTES)**

Approved Document L1A



**Building Control
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With effect from **6th April 2006 demonstrating compliance** with the requirements of regulation L1 – reasonable provision for the conservation of fuel and power - will be achieved by satisfying the following 5 criteria:

1. Ensure Design Emissions Rate of CO₂ is not greater than Target Emissions Rate (DER<TER)
2. Verify that performance of the building fabric and fixed building services are not worse than design limits
3. Provision of passive control measures to limit effect of solar gains
4. Quality and construction - verify as-built dwelling is consistent with the DER and meets TER
5. Provide owner/occupier with operating and maintenance information about the building and its services

Meeting criterion 1

- (DER<TER)
- Methodology for calculating TER and DER:
 1. Dwellings up to 450m² total floor area – SAP 2005 edition
 2. Dwellings over 450m² total floor area – SBEM (not published at 06/01/06) (ideally, this should be prepared by specialist)
- DER to be provided as part of a full plans submission or will be requested by building control where building notice procedure is used.

A conservatory built at the same time as and separated from the dwelling with an element that has a ‘U’ value suitable for external walls or glazing can be ignored (guidance in ADL1b to be followed for the conservatory itself). Where this is not the case then it needs to be included as part of the dwelling design and checked against the 5 criteria.

Meeting criterion 2

NB: it is not normally possible to compensate for poor fabric U values with highly efficient or renewable energy systems and as such the following minimum standards of insulation should be met:

Table 1 U-value standards (W/m²K) (* see note overleaf)

Element	a) Area weighted average U-value	b) Worst individual element
Wall	0.35	0.70
Floor	0.25	0.70
Roof	0.25	0.35
Windows, doors, roof lights	2.2	3.3

- Maximum air permeability rate of 10m³/(h.m²) at 50Pa should not be exceeded.
- Boiler efficiencies to be in accordance with Domestic Heating Compliance (DHC) Guide 2006 i.e. SEDBUK for mains gas and LPG 86%, oil 85%,
- Control provision to be in accordance with DHC Guide i.e. zoning, separate temp controls, HW temp. control, timer controls
- Pipe insulation provision to DHC Guide
- Mechanical ventilation to be in accordance with GPG 268 – Energy efficient ventilation in housing
- Mechanical cooling: fixed air conditioning units equal to or greater than class C energy rating (sch. 3 of the Energy Information Regs 2005)
- Fixed internal lighting-fittings that only take lamps having a luminous efficacy of > 40 lumens/circuit watt in most frequented locations to following ratio a) 1 per 25m² of floor area (exclude garages); or b) 1 per 4 fixed fittings (fluorescent fittings OK, GLS tungsten lamps with bayonet cap, Edison screw bases or tungsten halogen lamps not OK). A lighting fitting may contain 1 or more lamps.

- Fixed external lighting – a) 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 b) fittings that only take lamps having a luminous efficacy of > 40 lumens/circuit watt

* Note that using these U-values doesn't mean that the TER will automatically be achieved and SAP 2005 will warn if unusual values are reported, e.g. wall U-value < 0.28, floor U-value < 0.20, roof U-value < 0.15, window/door U-value < 1.8 and air permeability < 7m³ at 50 Pa (see Appendix B of App. Doc. L1A).

Meeting criterion 3

- Prevent high internal temperatures due to excessive solar gains by a combination of window size, orientation, shading, ventilation and high thermal capacity-see CE129 Reducing overheating-a designer's guide.
- SAP 2005 Appendix P gives a checking procedure for excessive solar gains and can be used to show that there is no risk of high internal temperatures.

In limiting solar gain care should be taken to ensure that there are adequate levels of daylight - see BS 8206 for guidance.

Meeting criterion 4

- Have the key design features been carried out during construction?
 - Evidence to verify this can be the production of a checklist of key design features derived from the SAP assessment, which can then be used on site by building control officer/developer/architect/site manager.
 - Avoid thermal bridging by either:
 - a) Adopting approved design details such as “Limiting thermal bridging and air leakages: Robust construction details for dwellings and similar buildings”; or
 - b) Show that specific details will perform as well as the guidance in BRE IP01/06: “Assessing the effects of thermal bridging at junctions and around openings in the external elements of buildings”
- Builder will have to demonstrate that a site inspection regime is in place to ensure quality of construction. Where (a) above is used a checklist in accordance with this guidance will need to be completed and show satisfactory results.
- Air permeability to be within reasonable limits and as such Reg. 17C and 20B require the person carrying out the work to ensure that air pressure testing is carried out and a copy of the results given to the local authority not more than 5 days after the completion of work. Developments of no more than 2 plots may avoid testing by using a value of 15m³/(h.m²) for air permeability at 50 Pa when calculating the DER or show that the same dwelling type has passed an air test in the preceding 12 months
- Fixed heating and hot water systems and their controls are to be commissioned. In accordance with Reg. 20C the person carrying out the work shall give to the LA a notice of the proper commissioning not more than 5 days after the completion of work (or, 30 days if work is work being self-certified by a member of an approved Competent Persons scheme)

Meeting criterion 5

- Sufficient information, such as operating and maintenance manuals, to enable the owner to operate, maintain and regulate in an energy efficient and economic manner.
- Unless the dwelling is for occupation by the applicant an energy rating notice to be affixed in a conspicuous place in the dwelling and notice of the rating to be given to the local authority 5 days before occupation (Reg.16)

Checklist for compliance

- Can be used as evidence of compliance with L1 and should be completed by authorised or suitably qualified person acting for the developer/builder. Acceptance by the local authority is discretionary depending upon whether the credentials of the person signing the declaration are deemed satisfactory (See Appendix A of Approved Document L1A).

NB: The design of other types of residential buildings will need to satisfy the guidance in Approved Document L2A, e.g. nursing homes, student accommodation and common areas in flats

Approved Document L1A and the DHC Guide can found online at www.odpm.gov.uk