



Building Regulation Update
Part L1A – Conservation of Fuel & Power in
New Build Dwellings
In force from 6th April 2006



1. Introduction

Part L1 for dwellings is being divided into L1A (new build) and L1B (work in existing buildings). Part L2 for building other than dwellings is also now divided into L2A for new build and L2B works to existing building.

Part L1A significantly raises the bar for new build dwellings and does away with the elemental and target u-value calculation methods in favour of design stage and post construction SAP calcs.

This guidance note is intended to raise awareness of the key changes to the requirements for works to new dwellings under Part L1A. The final version is now available from the ODPM website.

1. Application

L1A applies to new dwellings including self contained houses and apartments only. It should be noted that if heated, the communal areas in apartment blocks are assessable under Part L2A which deals with buildings other than dwellings.

Furthermore new buildings used for residential purposes other than dwellings such as care homes or those with shared facilities will also be assessed against L2A.

2. Basic Requirements

L1A removes the options of demonstrating compliance through elemental and target u-value methods. The emphasis is now on a whole building approach with compliance being determined on the basis of an overall carbon emission rate.

This is calculated using the latest version of SAP 2005 (the governments standard assessment procedure) or SBEM (simplified building energy model) for building >450m² floor area.

2.1 Design Stage

The first step is to calculate the target CO₂ emission rate (TER). There are 2 stages to calculate the TER.

Firstly using SAP or SBEM the emissions from a notional building of the same size and shape is calculated based on the current Part L requirements. The calculation software will give an emissions rate based on the provision of heating and hot water and internal lighting.

Secondly the TER is then calculated based on the notional emissions rate minus 20% improvement factor.

Once the target figure has been calculated the actual building designed emissions rate or DER (dwelling emission rate) needs to be determined and must not exceed the target value (TER).

2.2 Completion

Upon completion a further calculation must be completed to determine the emissions rate of the 'as built' construction, taking into account any changes to the specifications. This must show that the actual emission rate does not exceed the DER.

3. Achieving the TER

Achieving compliance will require a considerable improvement in the quality of construction practices and design in order to achieve the 20% improvement factor required.

Whilst the whole building approach does in theory provide a degree of flexibility in design, Part L1A puts limitations on the design. It should be noted however that in order to meet the TER, standards overall would need to be considerably higher. The use of low and zero carbon renewable energy supply systems will obviously have a large impact in helping to meet the TER.

Design limitations:

- Building envelope standards – Minimum area weighted u-values for all elements and controlled fitting (e.g floors, walls, roof and windows/doors etc). The minimum values are similar to existing elemental u-values, however it is highly likely that u-values will need to be significantly improved in order to meet the TER.
- Air permeability. A maximum air infiltration rate of 10m³/(h.m²) @50Pa. Note L1A introduces mandatory pressure testing dealt with later.
- Heating & hot water systems – The use of energy efficient appliances with suitable controls recommended under the Domestic Heating Compliance Guide (yet to be published by the ODPM).
- Insulation of pipes, ducts and vessels to be provided in accordance with the recommendations under the Domestic Heating Compliance Guide.
- Mechanical ventilation – Installed systems performance should be no worse than those described in GPG 268 Energy Efficient Ventilation in Housing.
- Mechanical cooling – Air conditioners to be min Class C energy efficient.
- Fixed internal lighting – Min 1 per 25m² floor area and min 1 in 4 light fitting must be energy efficient type.
- Fixed external lighting – Max 150W lights with movement and daylight sensors or use energy efficient light fitting.
- Limiting solar heat gains in summer – appendix P of SAP 2005 provides a procedure for designers to enable the risk of overheating to be determined.

4. Build quality

At this stage it is difficult to advise as to what typical values for fabric insulation will become the norm as compliance is now to be demonstrated by calculation of the building as a whole. This means that the required values are variable depending on particulars of each project.

5. Air Permeability Tests

As mentioned above Part L1A introduces mandatory air pressure testing regime upon new dwellings. In a multi unit development a percentage of each house type would need to be tested. The exact regime would depend on whether or not accredited design details have been used (e.g robust details).

The tests must be carried out by a suitably qualified person. The ODPM has advised that accredited members of the ATTMA (Air Tightness Testing and Measurement Association) would be deemed suitably qualified.

There are some exemptions for small developments of not more than 2 dwellings:

- Provide evidence that the builder has completed the same dwelling type within the preceding 12 months which was pressure tested and met the required design air permeability rate. Or
- Use a value of $15\text{m}^3/(\text{h}\cdot\text{m}^2)$ at 50 pa for the air permeability when calculating the DER. It should be noted that if using this method it would be extremely difficult to meet the TER without considerable use of advanced green building technologies.

It should also be noted that the ventilation requirements under Part F of the building regs has also been amended and increases the requirements for background ventilation. These changes also come into force of the 6th April 2006. The document can viewed on the ODPM website.

A copy of the air test report must be made available to building control together with the as built DER calculations in order to demonstrate compliance.

5. Commissioning and handover information

Upon completion the heating and hot water systems must be commissioned and tested by a suitably qualified person. Copies of the commissioning certificates are to be provided to building control together with a declaration from that person, that the installation has been commissioned in accordance with the manufacturers instructions.

A full set of operating and maintenance instruction must be provided to the occupier to enable efficient usage and notify them of the required routine maintenance schedule.

6. Model Designs

The ODPM anticipates that industry will come up with some model designs comprising packages of fabric u-values, maximum window opening areas, boiler efficiencies. Time will tell, indeed the website www.modeldesigns.info which is quoted in the new Part L currently just comes up as being a reserved domain name?

Help!

The full document can be downloaded from the ODPM website <http://www.odpm.gov.uk>. It should be noted that the final documents were only released by the ODPM in mid March.

For now the best advice is to find a good energy efficiency assessor and air testing company. There is a shortage in this area but more and more companies are expanding in the South West in order to take advantage of the business opportunity the new regulations present.

There is clearly going to be a steep learning curve for all parties across the industry and we will provide additional information as it becomes available.

Should you have any question relating to specific projects then please feel free to contact your local East Devon Building Control Officer for further advice on 01395 517482.