

Approved Document L1A 2010 edition: Summary of changes

Introduction

Part L1A has been restructured to accommodate several changes. The original Criterion 1 to 5 are still present, but the document has now been divided into 7 new sections as follows:-

1. An introductory section that sets out the general context in which the guidance provided in the Approved Document must be considered
2. Sets out the legal requirements contained in the Building Regulations
3. Contains general guidance through the definition of key terms, the types of work covered by the approved document, notification procedures and routes to compliance
4. Details the considerations that apply when designing a dwelling to meet the energy efficiency requirements (Criterion 1 - 3)
5. Details the considerations that apply when translating the design into actual construction performance (Criterion 4)
6. Describes the information that should be provided to occupiers to help them achieve reasonable standards of energy efficiency in practice (Criterion 5)
7. Provides pointers to useful information on different design approaches to meet the energy efficiency requirements.

For reference the Criterion are as follows:

1. The calculated CO₂ emission rate must not be greater than the target CO₂ emission rate;
2. The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency;
3. The dwelling should have appropriate passive control measures to limit the effect of solar gains in indoor temperatures in the summer;
4. The performance of the dwelling as built should be consistent with the dwelling CO₂ emission rate;
5. Provisions for the energy efficient operation of the dwelling should be put in place for the owner/occupier.

Section 1 - Introduction

This section explains what an approved document is and sets out the context in which it should be used.

Section 2 – The Requirements

The legal requirements are set in this section with extracts from the building regulations. The energy efficiency requirements in the approved document that deal specifically with new dwellings are Regulations 17C and 17E and also Schedule 1.

Regulation 17C

When a building is erected then it shall not exceed it's target CO₂ emission rate.

Regulation 17E

Deals with the production, delivery and the contents of energy performance certificates

Schedule 1

Sets out the focus of Part L to limit heat gains and losses, provide energy efficient fixed building services and to provide the owner with enough information so that it is used in such a manner as to use no more fuel and power than is reasonable.

Section 3 – General Guidance

This section introduces some new key terms relating to air permeability. These are:

- Limiting air permeability – The worst allowable air permeability
- Design air permeability – the target value set at the design stage
- Assessed air permeability – the value used in establishing the dwelling CO₂ emission rate

This section also introduces an extended definition of a dwelling type by stating that dwellings to be classified as the same type have to:

- i. be of the same generic form;
- ii. be of the same number of storeys;
- iii. be of the same design air permeability;
- iv. have similar adjacency to unheated spaces;
- v. have the same principal construction details;
- vi. have a similar number of significant penetrations;
- vii. have envelope areas that do not differ by more than 10%.

The increased number of criteria used to determine whether a dwelling belongs to a particular dwelling type means that there will likely be more dwelling types on a development. A greater number of dwelling types on a development means that it is likely that more dwellings will need to be tested.

It also states that the allocation of dwellings to a particular dwelling type is the responsibility of the person carrying out the pressure test.

Section 4 – Design Standards

The new calculations for the target CO₂ emission rate are specified in this section. Where Part L 2006 introduced a 20% reduction in the target CO₂ emission rate from a 2002 notional dwelling Part L 2010 introduces a further 25% reduction in the target CO₂ emission rate from the 2006 edition. This equates to a 40% reduction in the target CO₂ emission rate from a 2002 notional dwelling in the new Part L.

Previously party walls were assumed to have no heat loss but they are now included in the heat loss calculation. This means that there is also an additional heat loss that needs to be factored into the target CO₂ emission rate over and above the 25% reduction for dwelling that contain party walls.

SAP 2009 is also specified as the methodology approved by the Secretary of State for calculating the CO₂ emission rate of dwellings. The specific regulations that apply here are:

Regulation 17A

This defined that the Secretary of State shall approve a methodology for calculating asset ratings and operational ratings of buildings. Asset ratings are a numerical indicator of the estimated energy used with a standardized use of the building. Operational rating is a numerical indicator of the amount of energy consumed during the occupation of a building over a period of time.

Regulation 17B

The Secretary of State shall approve the minimum energy performance of new buildings in the form of target CO₂ emission rates.

Regulation 17C

When a building is erected it shall not exceed the target CO₂ emission rate.

Regulation 20D

This states that before any work starts on a new dwelling the target CO₂ emission rate, the calculated dwelling CO₂ emission rate as designed and a list of specifications used to calculate the dwelling CO₂ emission rate for the building must be submitted. This can be satisfied by using SAP 2009.

Not later than 5 days after the work has been completed the target CO₂ emission rate, the calculated dwelling CO₂ emission rate as built and details on whether the building has been constructed to the list of specifications at the as designed stage must be submitted. This again can be satisfied by SAP 2009. An Energy Performance Certificate is then issued by an accredited energy assessor.

When calculating the dwelling CO₂ emission rate in SAP 2009 the assessed air permeability is applied to a particular dwelling on a development. The assessed air permeability of a dwelling is determined as:

- i. where the dwelling has been tested the assessed air permeability is the measured air permeability;
- ii. where the dwelling has not been tested the assessed air permeability is the average test result obtained from other dwellings of the same type on the development increased by a margin of 2 (i.e. if the average assessed air permeability of a dwelling type is 5 then the assessed air permeability of the untested dwellings is 7);
- iii. On small developments a builder may opt out of pressure testing still by using an assessed air permeability of 15. However the increase in the CO₂ emission rate by using 15 coupled with the reduction in the target CO₂ emission rate based upon a notional dwelling means that this has to be significantly compensated for elsewhere in the dwelling. It is important to note however that they can still use the alternative approach of using the assessed air permeability of another dwelling of the same dwelling type that they have built during the preceding 12 month period.

Section 5 – Quality of construction and commissioning

This section states that the fabric of the building should be constructed so that the insulation is reasonably continuous over the whole of the building envelope and that the air permeability is within reasonable limits.

Contrary to previous assumptions party cavity walls may no longer be zero heat loss walls because the air flow in the cavity is a mechanism for heat loss. Therefore party walls now need to be included in the heat loss calculation for a building.

In order to demonstrate that an acceptable air permeability has been achieved the following regulation applies:

Regulation 20B

This states that air permeability tests must be conducted in accordance with a procedure and carried out in such circumstances as approved by the Secretary of State. The results and data upon which they are based are in a manner approved by the Secretary of State and that they should be given to the local authority not later than 7 days after the final test has been carried out. It also stipulates that test certificates are issued by people registered with the BINDT in respect of pressure testing buildings for air tightness.

The approved procedure for pressure testing by the Secretary of State is given in the ATTMA publication Technical Standard L1. The addition to this procedure is that trickle ventilators should be temporarily sealed rather than just closed.

Evidence that the equipment used has been UKAS calibrated now needs to be provided to the building control officer and that the person undertaking the test is registered to test that class of building and has received the appropriate training.

The sample of dwellings on a development is determined by the number of dwellings types as the lesser of 3 or 50% of a dwelling type needs to be tested. For flats each block constitutes a separate development. 50% of the dwellings making up the sample should be selected during construction of the first 25% of each dwelling type.

To show compliance with Regulation 20B the measured air permeability must not be worse than the limiting value of 10 and the dwelling CO₂ emission rate must be no worse than the target CO₂ emission rate. If this is not met then remedial measures should be carried out on the dwelling and new tests carried

out until it achieves compliance. In addition to this work on the dwelling another one of the same type should be tested and as such the overall sample size will increase. All the other dwellings of this type that have not been tested should be examined and where appropriate similar remedial measures should be applied.

On small developments an alternative approach to pressure testing is to either use an assessed air permeability of 15 or if a dwelling of the same type has been built by the developer during the preceding 12 month period than the assessed air permeability of that dwelling can be used.

Section 6 – Providing information

The owner of the dwelling should be provided with sufficient information about the building, the fixed building services and their maintenance requirements so that it can be operated in an energy efficient manner. A suitable way to comply is to provide a set of operating and maintenance instructions aimed at achieving efficiency in the use of energy and power pitched at a level that householders can understand. Information should also be provided in parallel with the Energy Performance Certificate on how the energy performance of the building may be further improved.

Section 7 – Model designs

Some builders may prefer to adopt model design packages rather than engaging in design for themselves. The model packages should be made available at www.modeldesigns.info.