# Key Changes to Approved Document L1A 2010

Part L1A of the Building Regulations comes into force in October 2010.

The information below is from Dyfrig Hughes, Technical Manager for National Energy Services, and summarises the ten key changes to the Approved Documents .

***KEY CHANGE 1 : 25% Less $CO_2$ emissions than in 2006***

Part L1A 2010 aims to reduce CO2 emissions by 25% over Part L1A 2006. This is a 40% improvement over a dwelling built to the 2002 regulations. This corresponds roughly with the trigger point for Code for Sustainable Homes Level 3, in line with the government's strategy for getting new build dwellings to zero carbon by 2016.

***KEY CHANGE 2 : The 'Flat' TER wins the day***

The Target Emission Rate (TER) is calculated in much the same way as it was in Part L1A 2006. The main differences are that

(a) an improvement factor of 0.4 is used rather than 0.2 to give the 40% improvement referred to above

(b) the SAP 2009 methodology is used to estimate the carbon emissions from heating, hot water, lighting, pumps and fans.

The fuel factors have not changed so that electric heat pumps and biomass will continue to be encouraged by the TER; although this is countered to an extent by lower limiting U values (see key point 8). The fuel factor for heat pumps is also to be reviewed after the renewable heat incentive is introduced.

Thorpe Lodge, 1 Yarmouth Road, Norwich NR7 0DU
T: 01603 430100 F: 01603 430541
E: enquiries@cncbuildingcontrol.gov.uk
W: www.cncbuildingcontrol.gov.uk

The 'Aggregate' TER was rejected on the grounds that the benefits did not justify a change in methodology at this stage, despite the Aggregate option being selected for non domestic dwellings. The issue will be re-examined for Part L1A 2013.

You can explore how to meet the new TER in practice using the updated NHER SAP 2009 Preview software.

***KEY CHANGE 3 : Cavity Party Walls – insulating/sealing them does not count towards the 25%***

A key feature of SAP 2009 is that party walls with unfilled and unsealed cavities are assumed to have a U value of 0.5 W/m2K. The notional dwelling used in calculating the TER assumes a U value for cavity party walls of 0.0 W/m2K. This compares to 0.4 W/m2K in last year's Part L1A 2010 consultation. This means that insulating/sealing cavity party walls will not count towards the 25% improvement target.

***KEY CHANGE 4 : Thermal Mass – 0.08 for ACDs are no longer an option***

In the current Part L1A, it is acceptable to assume a y value of 0.08 W/m2K if Accredited Construction Details have been used. This will not be possible with Part L1A 2010. Instead, the length of each junction will need to be measured, multiplied by the appropriate psi values and added up to produce an 'effective' y value.

The psi values can either be values already supplied in the SAP 2009 document or supplied by the relevant approved government ACD scheme. Also, the psi values can be calculated for specific junctions. A confidence factor will be applied to the psi value calculation for an individual junction if either

(a) the calculated psi values are not from a government approved Accredited Details scheme or

(b) if no on site checks can be demonstrated to have been made.

The confidence factor applied to the psi value calculation is 25% or 0.02, whichever is the larger.

***KEY CHANGE 5 : Air Permeability – More Pressure Testing and a confidence factor for untested dwellings***

The volume of pressure testing required will roughly double. A pressure test should be carried out on three units of each dwelling type or 50% of the instances of the dwelling type, whichever is the smaller.

In addition, a confidence factor will apply to dwellings not pressure tested. Where a dwelling has been pressure tested, the measured value is used in the calculation of the DER. Where the dwelling has not been pressure tested, the value used in the DER calculation is the average of the measured values for dwellings of the same type but with the addition of a confidence factor of 2.0 m3/(h.m2) at 50 pa. This means, in effect, that the design air permeability must be at most 8.0 in order to meet the maximum allowable value of 10.0 at completion of the dwelling. A value of 15.0 can still be used in small developments.

***KEY CHANGE 6 : Low Energy Lighting – 100% counts towards meeting the TER***

A minimum of 75% of light fittings must be low energy. If further low energy light fittings are also low energy, the full 100% will contribute towards meeting the TER target.

***KEY CHANGE 7 : Electric Secondary Heating – no longer assumed***

In Part L 2006, a penalty was applied in dwellings not fitted with a secondary heating appliance. In such cases it was assumed that 10% of the heat in the property came from direct acting electric heaters, thereby significantly increasing the DER. However, no in Part L 2010, there is no such penalty unless the dwelling has a chimney or flue and no appliance is installed; in such cases the calculation is the same as in 2006.

Thorpe Lodge, 1 Yarmouth Road, Norwich NR7 0DU
T: 01603 430100 F: 01603 430541
E: enquiries@cncbuildingcontrol.gov.uk
W: www.cncbuildingcontrol.gov.uk

*KEY CHANGE 8 : New Limiting U values – including party walls*

| Element | 2006 | 2010 |
|---|---|---|
| **Roof** | 0.25 | 0.20 |
| **External Wall** | 0.35 | 0.30 |
| **Party Wall** | N/A | 0.20 |
| **Floor** | 0.25 | 0.25 |
| **Windows** | 2.20 | 2.00 |
| **Air Permeability** | 10 | 10 |

*KEY CHANGE 9 : Design Submissions Are Now Part of the Regulations as well as "As Built" Submissions*

In Part L1A 2006, it was recommended that a submission be provided to Building Control prior to the building work being completed on site; but this was not an absolute requirement.

However, in Part L1A 2010 the person carrying out the work must provide building control the TER, DER and a list of specifications before work starts on site. Then, no later than 5 days after the work has been completed, they must notify Building Control of the TER and DER actually achieved, and whether the building has been constructed as per the design specification; if not, a list of changes to the design specification must be supplied. This is to better enable Building Control departments to confirm that what has been built aligns with the claimed performance. New outputs from SAP software will be available to help Building Control departments with this process.

*KEY CHANGE 10 : Addressing the Performance Gap*

There is growing evidence that completed dwellings do not, in practice, achieve the intended energy performance. This is referred to by government as the 'performance gap'. If we are to achieve true zero carbon by 2016 it is vital that this gap be closed. Part L1A 2010 contains various things that aim to contribute to this.

Thorpe Lodge, 1 Yarmouth Road, Norwich NR7 0DU
T: 01603 430100 F: 01603 430541
E: enquiries@cncbuildingcontrol.gov.uk
W: www.cncbuildingcontrol.gov.uk

Firstly, the document is clearer than previous versions in distinguishing between ‘Regulation’ and ‘Guidance’ and is less ambiguous in many places. This should help developers better understand what is required of them and give Building Control clearer guidance on how to check for compliance.

Secondly, the requirement to produce a “Design” submission as well as an “As Built” Submission, including a comparison of specifications, will hopefully bring more standardisation and rigour to the compliance checks.

Thirdly, the notion of ‘confidence factors’ should start to reward those developers who adopt good quality control procedures both in design and on site. We can expect to see more of these confidence factors in 2013 and beyond.

Article written by Dyfrig Hughes, Technical Manager, NES

Thorpe Lodge, 1 Yarmouth Road, Norwich NR7 0DU
T: 01603 430100 F: 01603 430541
E: enquiries@cncbuildingcontrol.gov.uk
W: www.cncbuildingcontrol.gov.uk