

Technical Datasheet

Proposed Amendments to Part L (Conservation of Fuel and Power) of the Building Regulations for England and Wales

This datasheet provides a summary of the proposed changes to Part L of the Building Regulations as published by the Government's Department for Communities and Local Government (CLG) on the 18th June 2009. These proposals are subject to consultation therefore it is possible that the final published document may change. This document is intended for guidance only and is not exhaustive, for more detailed information please refer to the CLG website.

The proposed changes are expected to be published in early 2010 and come into force from October 2010.

As with the current Approved Document L, the proposed amendments cover all aspects of a building and its services, not just glass and windows. The previous amendments to Approved Document L, implemented in 2006, introduced many new changes but we were always aware that this would not be the end. It was intended that these be reviewed regularly and amended as necessary in order to help the UK Government meet CO₂ reduction targets. Further amendments are expected both in 2013 and 2016.

This datasheet aims to summarise the main points relating to glazing, grouped by the four main parts of Approved Document L. These are:

- ADL1A - New dwellings.
- ADL1B - Work in existing dwellings.
- ADL2A - New buildings that are not dwellings.
- ADL2B - Work in existing buildings that are not dwellings.

New Build Dwellings (ADL1A) & Non-Dwellings (ADL2A)

In 2006, a 'Target carbon dioxide Emission Rate' (TER) was introduced as the minimum energy performance requirement for a proposed building.

This requires comparison of CO₂ emissions from the actual building or dwelling (BER/DER) with a TER based upon a hypothetical reference or "notional" building of the same shape and size. The only way of complying with the energy requirements are to calculate, using approved Government calculation software, the CO₂ emissions for the proposed building as a whole, and to show that the levels for both the designed building and the constructed building are no greater than the TER.

As per the amendments in 2006, there are some limits on design flexibility to ensure minimum standards of energy efficiency are achieved in

all cases. It is expected that the present system of "backstops" or "worst acceptable" standards for windows will stay in place, but may be adjusted to reflect the Government target reductions in CO₂ emissions. At present the whole window U-value is set at 2.2 W/m²K (area-weighted average) for 2010.

It is also noted that although the Building Regulations do not specify minimum daylight requirements, if the area of glazing is much less than 20% of the total floor area, some parts of the dwelling may experience poor levels of daylight, resulting in increased use of electric lighting with an associated energy deficit.

Non-Dwellings

The Government wants to introduce improved energy efficiency standards for new non-domestic buildings, and in its 2008 Budget announced an ambition for all new non-domestic buildings to be net zero carbon from 2019. It is therefore proposing a phased improvement beginning with a target 25% (aggregate) reduction in CO₂ emissions across all new non-dwellings in 2010 (c.f. 2006).

The overall performance of a proposed building should be assessed using an approved calculation tool such as the Simplified Building Energy Model (SBEM).

It should also be noted that to help constrain the energy-burden of air conditioning use, a revised limit on solar gains is also being proposed for non-domestic buildings. The solar gains through the glazing aggregated over the period from April to September must be no greater than would occur through one of the following reference glazing systems with a defined total solar energy transmittance (g-value):

- for every space that is predominantly side lit, the reference case is an east facing façade of the same total area that is 40% glazed as viewed from the inside out and having window units that have a framing factor of 10% and a solar energy transmittance (g-value) of 0.46
- for every space that is predominantly top lit, the reference case is a horizontal roof of the same total area that is 15% glazed as viewed from the inside out and having rooflights that have a framing factor of 25% and solar energy transmittance (g-value) of 0.46.

Double glazing containing high performance products from the SGG PLANITHERM® and SGG COOL-LITE® ranges are designed to comfortably satisfy and exceed the requirements of the new ADLs whilst also offering high levels of neutrality and light transmission, for improved aesthetic performance.

Dwellings

The Government set out in its Building a Greener Future - Policy Statement (July 2007) that new homes will be net zero carbon from 2016. As a step to achieving this target, energy efficiency standards for new homes are to be improved by 25% (fixed) in 2010 (c.f. 2006).

The calculation methodology for individual dwellings would be the Government's Standard Assessment Procedure (SAP) software.

Glazing Options

To meet the "worst acceptable" whole-window U-value of 2.2 W/m²K, it will be very difficult for developers to avoid using low-E glass as a minimum. With its optimised balance of low U-value and high g-value, SGG PLANITHERM® TOTAL will remain one of the most energy efficient solutions for new dwellings. In fact developers see low U-value products such as SGG PLANITHERM® TOTAL as crucial in allowing them to make trade-offs with other building elements.

On the other hand, to address the need for reduced heating and cooling of new non-dwellings, there is likely to be an increased requirement for high performance solar control products, such as the SGG COOL-LITE® SKN range, offering a combination of low U-value and low g-value performance.

Work in Existing Dwellings and Non-Dwellings (ADL1B & ADL2B)

Dwellings

The scope of ADL1B continues to include certain "controlled fittings". These include windows, roof windows, rooflights or doors (including the frame). Consequently, replacing the glazing whilst retaining an existing frame is not providing a controlled fitting, and as such does not have to meet the Part L standards.

Controlled fittings must conform with the following standards:

Fitting	Standard
Window, roof window or rooflight	WERs ⁽¹⁾ = band C
Doors with >50% of internal face glazed	1.8 W/m ² K for the whole unit
Other doors	1.8 W/m ² K for the whole unit

(1) Window Energy Ratings - see BFRC website www.bfrc.org

At present, Window Energy Ratings (WERs) are proposed to be the sole method for demonstrating compliance with ADL1B'. Only in exceptional circumstances, e.g. for one-off replacements, may the alternative standard of a centre pane U-value of 1.2 W/m²K be accepted.

'As part of the consultation phase, Saint-Gobain Glass UK will lobby for an alternative method of compliance to WERs to be included in ADL1B i.e. U-value of 1.5W/m²K for the whole unit.

Non-Dwellings

For existing non-dwellings ADL2B broadly permits two methods of compliance:

Fitting	Standard
Window, roof windows and glazed rooflight ⁽¹⁾	1.5 W/m ² K for the whole unit; or 1.2 W/m ² K for centre pane
Alternative option for windows in buildings that are essentially domestic in character ⁽²⁾	WERs ⁽³⁾ = band C
Curtain walling	See below
Doors with >50% of its internal face glazed	1.8 W/m ² K for the whole unit

(1) excludes display windows

(2) e.g. student accommodation, care homes

(3) Window Energy Ratings - see BFRC website www.bfrc.org

In the case of curtain walling as a controlled fitting into existing non-dwellings, the overall U-value should be no greater than 0.8 + 1.2X (where X is the fraction of the curtain wall that is glazed).

Glazing Options

With WERs currently being proposed as the sole method of compliance, never has it been more important to find cost-effective solutions for achieving band C windows and upwards. SGG PLANITHERM[®] TOTAL is one of the most energy-efficient products for WERs, performing significantly better than traditional low-E products. In addition with an optimal centre-pane U-value of 1.2W/m²K, SGG PLANITHERM[®] TOTAL assists with achieving the lower whole-window U-value targets.

Conservatories

It is proposed that conservatories <30m² in size no longer be exempt from Part L of Building Regulations for the first time.

A conservatory is defined as an extension to a building, which is thermally separated from the attached building by windows, walls and doors of a similar standard to the rest of the building and with independent heating controls (where used). It also states that the area of transparent or translucent material in the external envelope must be more than 150% of the floor area.

Standards for conservatories are outlined as the same as detailed in Table 1 (overleaf). However, it is expected that maximum U and g standards will be implemented for controlled fixings (windows, roof windows and glazed doors) and that the WER band C option will be removed.

Although conservatories are not notifiable, the Local Authority may check the installation. The installer should therefore produce a schedule for the owner as evidence of compliance. This document should include details of the provisions made for thermal

separation, elemental performance standards of the various construction elements (i.e. glazing), the heating system and controls, ventilation to limit summer overheating and advice on how different patterns of use will influence energy consumption and running costs.

According to the proposals, this is the first stage of a proposed progressive tightening of conservatory standards, such that conservatories will ultimately be treated exactly the same as extensions.

Glazing Options

SGG PLANITHERM[®] 4S has been developed especially for conservatory glazing applications. Offering excellent solar control functionality combined with enhanced thermal insulation, SGG PLANITHERM[®] 4S provides true year-round comfort when used throughout the conservatory. For conservatory roofs, this can be combined with products from the SGG BIOCLEAN[®] COOL-LITE range for even lower g-values and permanent self-cleaning capability, resulting in superior comfort.

Timings

- The consultation period ended on the 17th September 2009.
- The new Part L will be published in early 2010.
- The new Part L will be implemented in October 2010.

Summary

New Build

- No elemental or target U-value methods
- Worst acceptable limits set for windows
- All conservatories now included
- Limits on solar gains in non-dwellings

Work in existing dwellings

- Window Energy Rating of minimum band C
- No elemental or target whole window U-value methods
- No centre pane option
- All conservatories now included

Work in existing non-dwellings

- Whole window U-value of 1.5W/m²K, irrespective of frame material.
- 1.2 W/m²K centre pane option.
- Window Energy Rating of minimum band C (non-dwellings that are domestic in character).

How will the changes in Building Regulations be enforced?

Compliance with the Building Regulations will be policed by Local Authority Building Control and competent persons schemes, such as FENSA and CERTASS. In particular, with the introduction of the Window Energy Rating scheme as the primary method of compliance for work in existing dwellings, FENSA will be linking each registration of replacement windows with the British Fenestration Rating Council (BFRC) database. This will confirm that the replacement windows comply with the new regulations.



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*<http://www.communities.gov.uk/publications/planningandbuilding/partl2010consultation>

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