

## CHANGES TO APPROVED DOCUMENT L OF THE BUILDING REGULATIONS FOR ENGLAND AND WALES

### The more things change, the more they stay the same

1

In April 2006, Approved Document L of the Building Regulations will change again.

The good news is that the changes are unlikely to affect the way fabricators and installers work. In the vast majority of cases a window with a minimum air gap of 16mm one pane of low e glass fitted into a PVC-U frame will provide the level of thermal insulation required.

#### Why then have the Regulations been changed?

The changes (with respect to windows) have been made to:

1. Allow compliance to be demonstrated using the BFRC Window Energy Rating system
2. Increase the requirements for extensions to all building types
3. Close a number of loopholes.

#### The requirements

Table 1 has been drawn from the Approved Documents. This is the essential information relating to windows contained in those documents.

Spectus' technical department have drawn up the table to provide a quick reference. The following notes provide background information.

#### Notes on the table contents

##### Work in new Dwellings:

All new dwellings will have to achieve a specified Total Emissions Rating (TER). This rating is determined by calculation and, for most projects, a U value of 2 will be assumed for windows. In any event the maximum U value allowed for windows is 2.2.

Lower U values for windows may be specified, but this is likely to be the exception rather than the rule.

##### Work in Existing Buildings:

Reference to other parts of the Approved Document suggests this section relates to 'existing dwellings'.

*Replacement Windows* - as can be seen, for replacement work, compliance is demonstrated by fitting a window with a U Value of 2 or less. This is no different from existing regulations.

APPROVED DOCUMENT

COMPLIANCE METHOD

Table 1

|   | Whole window U Value | Window Energy Rating (WER) | Max allowable whole window U Value | CO2 emissions   | Glass centre pane value |
|---|----------------------|----------------------------|------------------------------------|-----------------|-------------------------|
| <b>ADL1A - Work in new dwellings (2006 edition)</b>                 | n/a                  | n/a                        | 2.2                                | TER             | n/a                     |
| <b>ADL1B - Work in existing buildings</b>                           |                      |                            |                                    |                 |                         |
| Replacement windows   | 2.0                  | E                          | n/a                                | n/a             | n/a                     |
| Extensions  | 1.8                  | D                          | n/a                                | SAP             | n/a                     |
| Conservatories (under 30sq.m)                                       | no requirements      | no requirements            | no requirements                    | no requirements | no requirements         |
| Conservatories (over 30sq.m)  | 2.0                  | E                          | n/a                                | n/a             | 1.2                     |
| <b>ADL2A - New buildings other than dwellings</b>                   | n/a                  | n/a                        | 2.2                                | SBEM            | n/a                     |
| <b>ADL2B - Work in existing buildings that are not dwellings</b>    |                      |                            |                                    |                 |                         |
| Replacement windows   | 2.2                  | E(1)                       | 2.7 (2)                            | 2.7 (2)         | 1.2                     |
| Extensions (greater than, 100sqm or 25% of existing floor area)     | n/a                  | n/a                        | 2.2                                | SBEM            | n/a                     |
| Extensions (less or equal to, 100sqm or 25% of existing floor area) | 1.8 (3)              | D                          | n/a                                | SBEM (4)        | n/a                     |
| Consequential improvements (5)                                      | 2.2 (6)              | n/a                        | n/a                                | n/a             | 1.2                     |
| Conservatories (under 30sq.m)                                       | no requirements      | no requirements            | no requirements                    | no requirements | no requirements         |
| Conservatories (over 30sq.m)  | 2.2                  | n/a                        | n/a                                | n/a             | 1.2                     |

(1) For residential non domestic

(2) Where high heat gain is likely

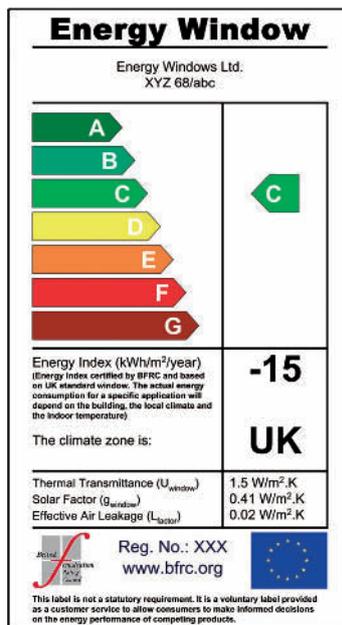
(3) Windows less than or equal to 30% of wall area etc

(4) Emissions of total building to be no worse than results for equivalent U values

(5) For any improvements to buildings over 1000sqm that increases the volume or service capacity of the building

(6) If existing windows are worse than 3.3

However, it is also now possible to demonstrate compliance by fitting a window with a Window Energy Rating (WER) of E.



BFRC Label

In most cases a sealed double glazed unit with a minimum air gap of 16mm, one pane of low e glass, fitted into a PVC-U frame will achieve a WER of E. For further information visit the website of the British Fenestration Ratings Council (BFRC) on [www.bfrc.org](http://www.bfrc.org).

Mail Address:

British Fenestration Rating Council, PO BOX 24, HITCHIN, HERTS, SG5 2FP

Phone: 08700 278 494

Fax: 08700 278 493

*Extensions* - for extensions the requirements have been tightened up. It may now be necessary for windows in extensions to have a U value of 1.8 dependant on the ratio of window to floor area. This means the glass unit needs a minimum air gap of 16 mm one pane of low e glass and the unit should be filled with argon.

An alternative way of demonstrating compliance is to use a window with a WER of D.

*Conservatories under 30sqm* - there are no requirements provided the conservatory has a climate system that is separate from that of the rest of the house and there is a door between the house and the conservatory that provides a level of thermal insulation equivalent to an external door.

**Work in new buildings other than Dwellings**

All new buildings (other than dwellings) will have to achieve a specified rating determined using the Standard Buildings Emission Method (SBEM). This is determined by calculation and, for most projects a U value of 2 will be assumed for windows. In any event the maximum/minimum U value allowed for windows is 2.2.

**Work in existing buildings that are not dwellings:**

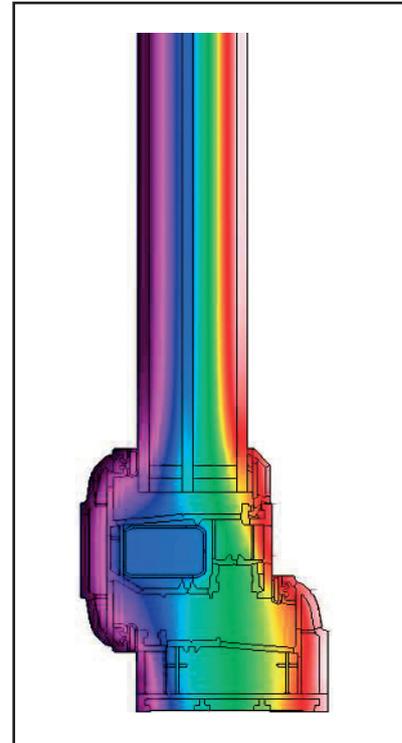
*Extensions (greater than, 100sqm or 25% of existing floor area) -* all extensions of this size to buildings other than dwellings will have to achieve a specified rating determined using the Standard Buildings Emission Method (SBEM). This is determined by calculation and, for most projects a U value of 2 will be assumed for windows. In any event the maximum/minimum U value allowed for windows is 2.2. This can rise to 2.7 in cases where solar gain could be problematic.

*Extensions (less or equal to, 100sqm or 25% of existing floor area) -* Probably the most complicated scenario with all sorts of option weightings and provisors. Basically a U Value of 1.8 or a WER of D will cover everything.

**Consequential improvements.**

If a building is over 1000m<sup>2</sup> and is being extended or having its services upgraded, its windows will have to be upgraded if they have a U Value greater than 3.3. The upgraded window must have a maximum U Value of 2.2 or a centre pane value of 1.2.

*Conservatories* added to buildings other than dwellings are treated in exactly the same way as those added to dwellings.



Thermographic image of temperature change through a PVC-U window

Note: The information in this brochure is provided in good faith as a service to designers, contractors and manufacturers. Building Regulations and Standards are under constant review and are frequently changed. It is important to ensure the requirements of the most recent Regulations are met.