BUILDING CONTROL

GUIDANCE NOTE 8

GUIDANCE NOTES FOR CONTRUCTION PROFESSIONALS TO REPLACEMENT DOORS AND WINDOWS

From April 2002, all replacement glazing comes within the scope of the Building Regulations. Anyone installing replacement windows or doors now has to comply with strict thermal performance standards which have now been updated by the new Part L 2000 edition.

One of the main reasons for the change is the need to reduce energy loss. The Building Regulations have controlled glazing in new buildings for many years but these represent a very small proportion of our housing stock. We must now seek to improve the performance of the much larger numbers of existing buildings if we are to meet the stringent but essential new national and global energy saving targets.

When the time comes to sell your property, your purchaser's solicitor will ask for evidence that any replacement glazing installed after April 2002 complies with the new Building Regulations. There are two ways to prove compliance: -

1. Provide a certificate showing that the work was carried out by an installer registered under the FENSA scheme.

2. Provide a certificate from the Local Authority confirming that the installation was approved under the Building Regulations.

The FENSA scheme

It is estimated that around 2 million replacement glazing installations are completed each year. Local Authorities would be placed under immense pressure if all these were to be assessed under the normal application process. It is however essential to find a way to ensure that work is done properly without imposing an excessive financial and administrative burden on householders and installers. The solution is a new self- certification scheme for installers meeting certain criteria. The scheme is called Fenestration Self-Assessment, or FENSA. This was set up by the Glass and Glazing Federation, in association with all key stakeholders, and meets central Government requirements. A sample of the work of each installer will be assessed by FENSA appointed inspectors to ensure standards are maintained. FENSA will also notify Local Authorities of all completed FENSA installations, and issue certificates to householders confirming compliance.

The Local Authority scheme

Any installation by a firm not registered to self certify, or undertaken as a DIY project, will need full Local Authority Building Control approval under the Building Regulations. Local authorities will be aware of all the approved installers in their area, making unauthorised work easily identifiable. As the householder, you are ultimately liable for ensuring that your installation complies with the Building Regulations and is registered under one of the above schemes.

Before you sign a contract to buy replacement glazing, be sure to ask whether the installer is able to self-certify. If not, you must ensure that an application and the appropriate fee are deposited with your Local Authority before work starts.

Technical Guidance –see below for glossary

Replacement doors and replacement windows are subject to Building Regulation control and will need to comply with the following Requirements of the Building Regulations: -

- Windows, roof windows ad rooflights are to have a maximum U-value of 2.0 W/m2K average for the whole unit or 1.2W/m2K for the centre pain glazing (Energy Rating Band E) – for example, achieved by using sealed double glazed units with low-emissivity (soft coated) inner panes and a 16mm air gap between panes.
- Replacement doors with >50% glazing must have a max overall U-value of 2.2W/m2K, or 1.2Wm2K for the centre pain.
- Replacement doors with <50% glazing require a max 3.0W/m2K U-value.

The tables that follow provide further guidance on the thermal performance of different elements.

- All new units are to be draught proofed.
- The glazing to doors and windows is to be "safety glazing" if located in "critical locations".
- The opening part of the new window should not be any nearer a flue outlet than the existing opening.
- Where the framing to the windows or doors are structural i.e. supporting the structure above (e.g. in a bay window) the new window frame is to be of adequate strength to support the structure.
- Where the width of the window or door opening is to be increased, a new, appropriately sized longer lintel must be inserted.
- Increasing the depth of the window on elevations close to the boundary may not be possible due to increased risk of spread of fire.
- Where the proposed clear and unobstructed openable areas of side hung casements or sash type windows in habitable rooms is smaller than that existing, the means of escape in case of fire may be adversely affected.

The following guidelines should also be adhered to: -

- The minimum opening area of windows (for effective ventilation) should be 1/20th of the floor area of the room.
- "Trickle ventilator" strips should be provided in the top of the windows.
- Where the opening part of the window is lower than 800mm from floor level there should be suitable guarding provided by either fixed balustrading or a child proof restrictor fitted to the hinge to limit its opening to 99mm and toughened glass (or other safety glazing) must be used.
- All "habitable rooms" above ground floor level, or any inner room, should be provided with "means of escape windows and hinges". The use of centrally mounted pivot hinges used to facilitate cleaning often restricts the means of escape.

Glossary of terms used in guidance.

"clear opening area". This is the area between edges of an open window through which a person could climb out.

"Trickle ventilator" - openable slots in the top of the window frame which can be left open to provide some ventilation without compromising security. For habitable rooms this should be a minimum of 8000mm² trickle ventilation area and 4000mm² for all other rooms (including WC's).

"safety glazing" - toughened or laminated glass conforming to the requirements of BS 6206

"critical locations" - any glazing within 800mm of floor level or glazing contained within doors and side panels within 300mm of the door opening which is within 1500mm of floor level.

"habitable rooms" - bedrooms, living rooms, dining rooms, studies, children's rooms, TV or games rooms.

"means of escape windows and hinges" - an openable window provided with means of escape hinges which will open to provide an unobstructed area of minimum 0.33m² area with a minimum 450mm dimension in either direction. (i.e. a clear unobstructed aperture of 750 x 450mm). The cill height of these windows should fall between 800 -1100mm above floor level.

EXAMPLES OF THERMAL PERFORMANCE OF ELEMENTS OF REPLACEMENT GLAZING.

INDICATIVE U VALUES FOR METAL FRAMED WINDOWS – 4mm thermal break
U-Value required maximum 2.0W/m²K

	Gap between panes / mm		
Glazing type	**6**	**12**	**16 or more**
Double glazing (low-E, εn 0.05, Argon filled)	2.8	2.3	2.1
Triple glazing (low-E, εn 0.2)	2.6	2.2	2.0
Triple glazing (low-E, εn 0.1)	2.5	2.0	1.9
Triple glazing (low-E, εn 0.05)	2.4	1.9	1.8
Triple glazing (low-E, εn 0.2, Argon filled)	2.4	2.0	1.9
Triple glazing (low-E, εn 0.1, Argon filled)	2.2	1.9	1.8
Triple glazing (low-E, εn 0.05, Argon filled)	2.2	1.8	1.7

For roof lights incorporating a thermal break other than 4mm the following adjustments should be made to the above u-values:

Thermal Break/ mm	0	4	8	12	16
Adjustment W/ m²K	+0.7	+0.3	+0.2	+0.1	+0.1

INDICATIVE U VALUES FOR PVC-U OR WOOD FRAMED WINDOWS ROOFLIGHTS AND DOORS

U-Value required maximum 2.0W/m²K

	Gap between panes / mm			**Adjustment for rooflights**
Glazing type	**6**	**12**	**16 or more**	
Double glazing (low-E, εn 0.15)	2.7	2.2	2.0	+0.2
Double glazing (low-E, εn 0.1)	2.6	2.1	1.9	+0.2
Double glazing (low-E, εn 0.05)	2.6	2.0	1.8	+0.2
Double glazing (low-E, εn 0.2, Argon* filled)	2.5	2.1	2.0	+0.2
Double glazing (low-E, εn 0.1, Argon* filled)	2.3	1.9	1.8	+0.2
Double glazing (low-E, εn 0.05, Argon*	2.3	1.8	1.7	+0.2

filled)				
Triple glazing	2.4	2.1	2.0	+0.2
Triple glazing (low-E, εn 0.2)	2.1	1.7	1.6	+0.2
Triple glazing (low-E, εn 0.1)	2.0	1.6	1.5	+0.2
Triple glazing (low-E, εn 0.05)	1.9	1.5	1.4	+0.2
Triple glazing (Argon filled)	2.2	2.0	1.9	+0.2
Triple glazing (low-E, εn 0.2, Argon* filled)	1.9	1.6	1.5	+0.2
Triple glazing (low-E, εn 0.1, Argon* filled)	1.8	1.4	1.3	+0.2
Triple glazing (low-E, εn 0.05, Argon* filled)	1.7	1.4	1.3	+0.2
Solid wooden door**	3.0			
*The gas mixture is assumed to consist of 90% argon and 10% air **For doors which are half glazed the u-value of the door is the average of the appropriate window u-value and that of the non-glazed part of the door.				

- **A charge will be payable if you need to make a Building Regulations application. Please contact Building Control for details and application forms.**
- **If your property is listed, is situated within a conservation area or is of special historic interest, relaxed standards may apply. Please ask if you require clarification.**
- **Planning permission may be required for changes in the external appearance of your property.**
- **Please note that this guidance does not apply where individual panes of glass are replaced but the existing frames are retained.**
- **Further information is available on the GGF website at www.ggf.org.uk.**
- **This information is available on request in other formats.**

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This guidance note is one of a series produced by East Devon Building Control