

# **FENSA Registered Businesses Technical Seminar**

'C' through to Building Regulation  
Compliance

**FENSA**

# Welcome

**FENSA**

# Housekeeping

- Fire alarms and exits
- Timings for presentation
- Mobile phones
- Has everybody registered for the presentations?

# What we will cover today.

- Building Regulations
- Approved Documents.
- Approved Document L 2010
- BFRC and window energy ratings
- Whole window U value
- Approved Document F 2010
- Approved Document N
- Approved Document B
- FENSA surveyors guide
- FENSA Technical Helpline
- Questions.

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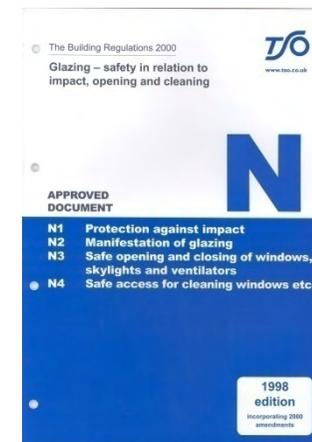
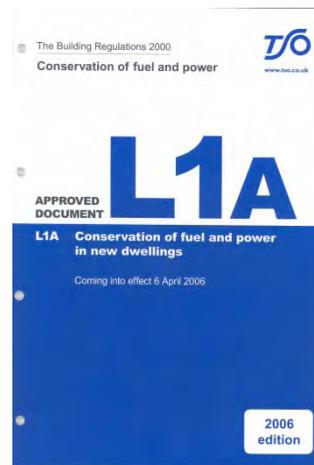
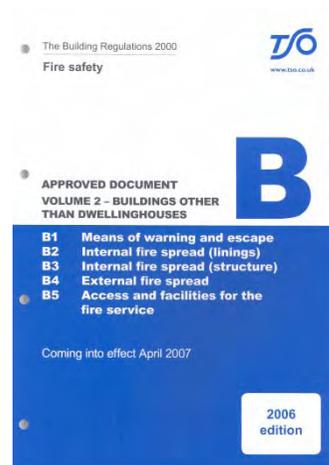
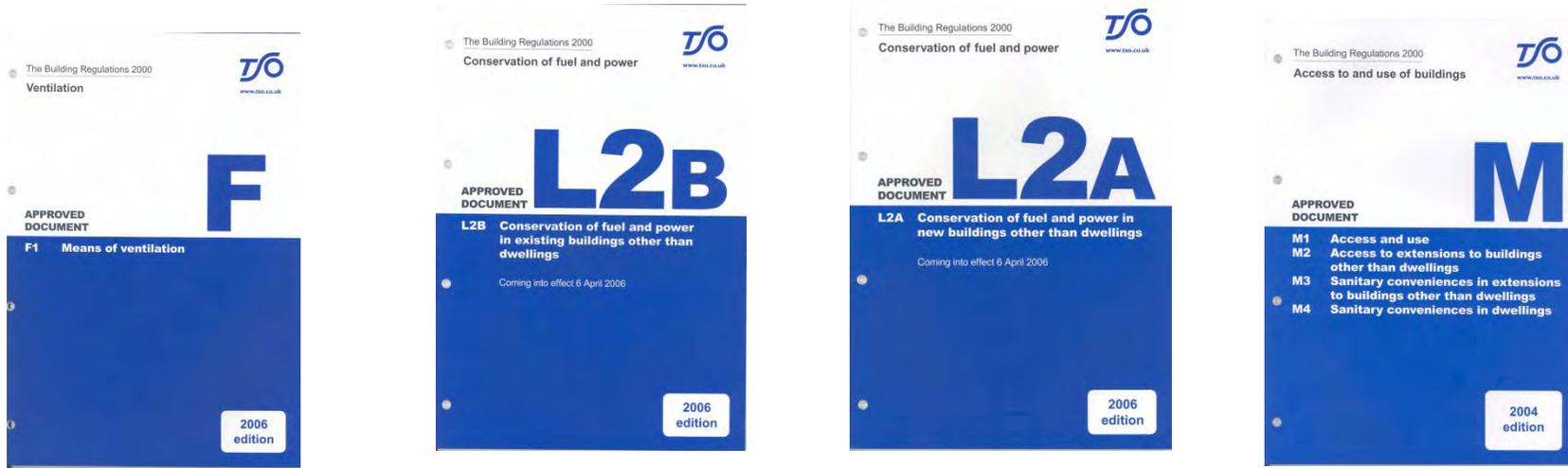
# Technical Seminar Information

- Seminar content available to download from the members area of the FENSA website
- Summary sheet
- Attendance certificate
- Feedback
- Updates on FAQ
- Action Plan

# Building Regulations

- Building Act
- Building Regulations exist to ensure the health and safety of people in and around all types of building, they also provide for energy conservation and access.
- Communities and Local Government
  - Guide to Building Regulations
  - Approved Documents

# Approved Documents



**FENSA**

# FENSA

- Enables companies who install replacement windows and doors to self certify compliance to the Building Regulations for England and Wales under the competent persons scheme.

# FENSA

*Where windows are to be replaced (but not where they are to be repaired only, as repair work to windows does not fall within the definition of building work) the replacement work should comply with the requirements of parts L and N of schedule 1. In addition, after the work has been completed, the building should not have a lesser level of compliance, with the other applicable parts of schedule 1.*

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# Approved Document L

## Conservation of fuel and power

### 2010.

- The aim of part L is for reasonable provision to be made for the conservation of fuel and power in dwellings by:

Limiting the heat loss through the fabric of the building

# Approved Document L – 4 parts

- ADL1A – new dwellings
- ADL1B – existing dwellings
- ADL2A – new buildings other than dwellings
- ADL2B – existing buildings other than dwellings

# Approved Document L – 4 parts

- ADL1A – new dwellings
- **ADL1B – existing dwellings**
- ADL2A – new buildings other than dwellings
- ADL2B – existing buildings other than dwellings

# Compliance with Approved Document L1B 'Conservation of fuel and power in existing dwellings' 2010.

All replacement windows achieve

- Whole window U-value of at least 1.6 (W/m<sup>2</sup>K),
- Window energy rating of band C or better.
- Note:

No longer can you generally comply with IGU's with a centre pane U-value of 1.2 (W/m<sup>2</sup>K).

Special circumstances apply

- more guidance to be provided
- Exception **NOT** the rule

# All replacement Installations

- Need to demonstrate compliance
  - WER Band C
  - Whole window U value 1.6 W/m<sup>2</sup>K
- Either own Licence / certificate or buy in approved product (fully glazed)
- FENSA registration
  - BFRC WER Licence number
  - Whole window U value declaration

# Window Energy Ratings

## The BFRC schemes

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# BFRC and window energy ratings

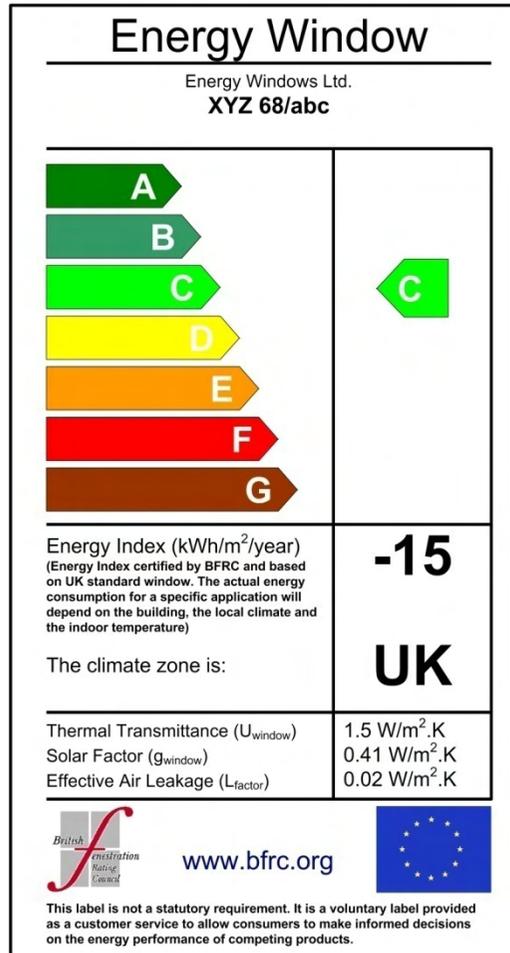
- Overall window and not just the insulating glass unit
- Measures the window U value,
- Solar gain and
- Air loss to

Produce an accurate performance figure which grades the window into one of seven bands A to G.

# BFRC WER bandings

BFRC Rating Scale	BFRC Rating
 A	0 or greater
 B	-10 to < 0
 C	-20 to < -10
 D	-30 to < -20
 E	-50 to < -30
 F	-70 to < -50
 G	Less than -70

# BFRC Label



**FENSA**



# How to gain a BFRC WER Licence

- Window company needs a simulation of their window.
- BFRC Certified Simulators.
  - BFRC web site (system co's & independents)
- Independent Agency undertakes review of company. (**NOT** ISO 9001)
- Report to BFRC Ltd
- Issue Licence artwork and register information on the BFRC web site [www.bfrc.org](http://www.bfrc.org)

# BFRC Authorised Retailer (AR) Scheme

- Aimed for installers / buy in product.
- Use a BFRC WER Licence.
  - Website listing
  - Labelling in their own name
  - BFRC Marketing tool kit
  - Improved FENSA Certificate
- To enable Licence Holder's to supply unglazed frames in a controlled fashion. (The AR must purchase IGU's identical to those used within the Licensed window).



“Look for the BFRC energy efficiency label”

James Strawbridge, tv presenter and eco campaigner

**BFRC Authorised Retailer Scheme**

[Click here](#) for more information

The BFRC is the UK's national system for rating Energy Efficient Windows and you will find everything you need to know about the ratings and the label on this website.

For more information on the GGF Carbon Calculator [Click Here](#)

**Energy Window**  
Energy Windows Ltd  
XYZ 68/abc

	<b>C</b>
<b>Energy Index (kWh/m<sup>2</sup>/year)</b> <small>(Energy Index certified by BFRC and based on UK standard window. The actual energy consumption for a specific application will depend on the building, the local climate and the indoor temperature)</small>	<b>- 14</b>
<b>The climate zone is:</b>	<b>UK</b>
<b>Thermal Transmittance (U<sub>window</sub>)</b> <b>Solar Factor (g<sub>window</sub>)</b> <b>Effective Air Leakage (L<sub>h,air</sub>)</b>	1.7 W/m <sup>2</sup> .K 0.50 0.10 W/m <sup>2</sup> .K

[www.bfrc.org](http://www.bfrc.org)

This label is not a statutory requirement. It is a voluntary label provided as a customer service to allow consumers to make informed decisions on the energy performance of competing products.



**TRADE**

Registered suppliers of BFRC rated Energy Efficient Windows can access support services and information. Non-registered businesses can find out how to get a product rated and the many benefits of doing so.

Enter trade area here



**HOMEOWNER**

Find out all you need to know about Energy Efficient Windows how they can reduce your energy bills and carbon emissions, how the labelling scheme works and how to locate the right window for you and a local company to fit it.

Enter homeowner area here



**MEDIA**

This area provides journalists with information about the BFRC Energy Efficient Windows ratings scheme and its label and who to contact for further details.

Enter press and media area here

[HOME](#)[BENEFITS OF REGISTERING PRODUCTS](#)[ENERGY RATINGS AND RATING LABEL](#)[GET YOUR WINDOWS RATED](#)[AGENCIES/SIMULATORS](#)[FURTHER INFO](#)[FAQ's](#)[REGISTERED BUSINESSES AND THE BFRC SCHEME](#)[MARKETING TOOL KIT](#)[SIMULATORS AREA](#)[NEWS](#)[CONTACT US](#)

## BFRC Authorised Retailer Scheme

### What is the BFRC Authorised Retailer Scheme?

The scheme is aimed at controlled expansion in a marketplace which is heading in the direction of Window Energy Ratings being used to demonstrate compliance with Building Regulations. It brings into the scheme Retailers/Installers who have no wish to become Licence Holders in their own right but wish to participate in the selling of Energy Rated Windows and in particular wish to be associated with BFRC.

### Who can become an Authorised Retailer?

Any customer of a BFRC 'Licence Holder' wishing to retail BFRC rated products to consumers becomes an Authorised Retailer by:

- Purchasing completed product
- Purchasing frames from the licence holder and sourcing the appropriate IGU independently

Existing clients of BFRC 'Licence Holders' will be able to continue to offer BFRC rated products in the same fashion as they do currently i.e. trade clients will not be forced to become ARs, however the following restrictions will apply:

- Licence holders can not supply unglazed BFRC rated windows to their trade clients. (The licence holder must have control over the specification and supply of

# Key steps to becoming a BFRC Authorised Retailer



- Inform Licence holder intention to be an AR
- Complete the application form.
- If you are going to source sealed units independently  
**IGU's need to be identical to the IGU's registered by the licence holder  
Supplier needs to be EN1279 compliant.**
- BFRC review completed application form and send invoice
- Receipt of payment of fees, BFRC will list your company and products registered on the BFRC website. Artwork for the BFRC license (energy labels) and a copy of the BFRC Marketing toolkit issued.
- 8 – 10 weeks you will have a surveillance check (this check will take place annually)
- Fees – Fensa Registered business £140/annum (10 Licences)

# BFRC Certificate of Addition



# BFRC Certificate of Addition

- Allows alternative / additional glazing solutions to a Licence
- Needs to be verified by simulation (currently working on simplification method)
- Needs to be in the same WER band
- 1 licence numerous IGUs



# Summary of the BFRC Products

- **Own Licence**
- **Authorised Retailer**
- **Licence of Addition**
- **Substitution rules for components –  
(watch this space)!**



# BFRC Fees

- **Own Licence**  
£200 per licence per year
- **Authorised Retailer (FENSA)**
  - £140/year (10 Licences including audit)
  - £200/year (11-20 Licences including audit)
  - £500/year (21-50 Licences including audit)
- **Authorised Retailer (non FENSA)**
  - £325/year (10 Licences including audit)
- **Licence of Addition**
  - One off £50 payment per addition.



# Whole window U value

The alternative route to compliance.

# Whole window U value

- CE marking declaration to conformity under EN 14351-1 accepted.
  - Whole window U value determined in accordance with EN 10077 parts 1&2
  - Use of notified test laboratory
  - Legal declaration for product placed on the market

# Whole window U value

- U value calculators
  - Fensa calculator
  - Building Research Establishment (BRE) Calculator
  - British Woodworking Federation (BWF) Calculator
  - Alternative FENSA approved calculators

# Fensa U value calculator

- Access via FENSA web site
- Annual fee to use the tool - £199
- Pay as you go to use – being investigated
- Details recorded within FENSA system for registered companies, accessed by inspectors on site to check.

# Fensa U value calculator

- Details of the frame U value
  - Systems company for metal or PVC-U
  - Or guidance U value for frame from calculator
  - Timber either
    - determine actual frame U value
    - Guidance values for overall dimensions and species – from calculator
- Details of the IGU
- Calculate the U value

# Whole window U value

- Use a BFRC Certified simulator or equivalent approved person.
- Systems company provides U value
- Evidence supplied with product, left with consumer for inspection.

# Doors

- Where a glazed panel within a door is equal to or greater than 50% of the entire door area (including the immediate frame but not adjacent glazed panels) - register with FENSA.
- Doors within the scope of AD L shall have a U-value not exceeding 1.8 (W/m<sup>2</sup>K).
- All other doors require a U-value not exceeding 1.8 (W/m<sup>2</sup>K). Currently not registered with FENSA.
- Adjacent windows do need to comply.

# Calculating the U value for Doors

- Detailed simulation – BFRC simulators
- U values calculators
  - Fensa calculator

# Transitional Arrangements

- Contracts signed before 1 October 2010, can comply with ADL1B 2006 guidance, as long as installation work starts before 6 April 2011.
- All contracts signed after 1 October must comply with the ADL1B 2010 guidance.
- Fensa inspectors will assume all Oct & Nov installations, orders were taken before 1 October. However Competent Persons need to comply with the correct legislation.

# **Options for FENSA Registered installers**

# **Fabricator installer who makes own IGU's**

- Get your own WER Licences
- Licence of addition for all of the IGU's manufactured
- Whole window U values from FENSA calculator

# Fabricator installer buys in IGU's

- Get your own WER Licences
- Licence of addition for all of the IGU's bought in
- Whole window U values from FENSA calculator

# Installer buys in fully glazed windows

- Use WER with product
- Become Authorised Retailer – own Licence
- Use whole window U value supplied
- Determine own whole window U value from FENSA calculator

# Installer buys frames and IGU's separately

- Become Authorised Retailer
- Use supplied U value
- Determine own U value from FENSA calculator

# Summary

- Need to show window installed meets WER band C or whole window U value 1.6
- Need to show door meets 1.8 U value.
- BFRC Licence number register at FENSA
- Fensa calculator U value details retained for inspection on site.
- Other U value certificates – with consumer for inspection.

# Approved Document F Means of ventilation 2010.

# 2009 consultation

- Proposal to install trickle ventilators in every replacement window.
- Cost benefit exercise was undertaken.
- Not sufficient evidence to justify change to the current provisions.
- i.e. same rules for trickle ventilators as 2006 edition of ADF.

# Approved Document F

Requirements of F1, There shall be adequate means of ventilation provided for people in the building.

Purge ventilation

Background ventilation

# Purge ventilation

- required occasionally to remove high levels of pollutants and water vapour. Purge ventilation may improve thermal comfort during the summer.

# Purge ventilation requirements

- For hinged or pivot window that opens 30 degrees or more, or for sliding sash windows, the area of the opening sash should be at least  $1/20$ th of the floor area of the room.
- For a hinged or pivot that opens less than 30 degrees, the area of the opening sash should be at least  $1/10$ th of the floor area of the room.

# Background ventilation

- Background ventilation provides controllable whole building ventilation

# Background ventilation requirements

- Where the outgoing window provided background ventilation, the replacement window must also provide background ventilation or alternative compliant high level ventilation must be provided.
- If trickle ventilators are used to provide background ventilation then the following performance is required
  - Habitable rooms 5000mm<sup>2</sup> equivalent area.
  - Kitchens, bathrooms and other wet room areas require 2500mm<sup>2</sup> equivalent area.

# Guidance on ventilation

- If trickle ventilators are fitted in the window that is being replaced then a trickle ventilator must be fitted to the new window or an appropriately sized air brick fitted. (Two stage locking handles are not acceptable as an alternative to trickle ventilators).
- If no trickle ventilators are fitted and two-stage locking handles are fitted in the windows being removed then either ;
  - a) trickle vents can be fitted as an alternative, or
  - b) two-stage locking handles can be fitted or
  - c) appropriate air-bricks can be fitted.

# Guidance on ventilation

- If no ventilation is provided in the windows being removed then a number of options are available to the consumer. Consideration should be given to the fitting of:
  - a) trickle vents, or
  - b) two-stage locking handles, or
  - c) air bricks.
- Matters should not be made worse and therefore the customer can in these circumstances opt not to fit ventilators as set out above.

# Guidance on ventilation Combustion appliances

- The provision of permanent ventilators for combustion appliances is a different matter and compliance with Approved Document J is mandatory.
- Please refer to Approved Document J on Gas safety.
  - Permanent ventilation through a window.
  - Flues from gas appliances.
- If a Gas appliance in a room and you are not sure about the ventilation consult a “Gas Safe” registered gas fitter.

# Any questions on Part F and Ventilation?

Additional information.



# Approved Document N



# Approved Document N

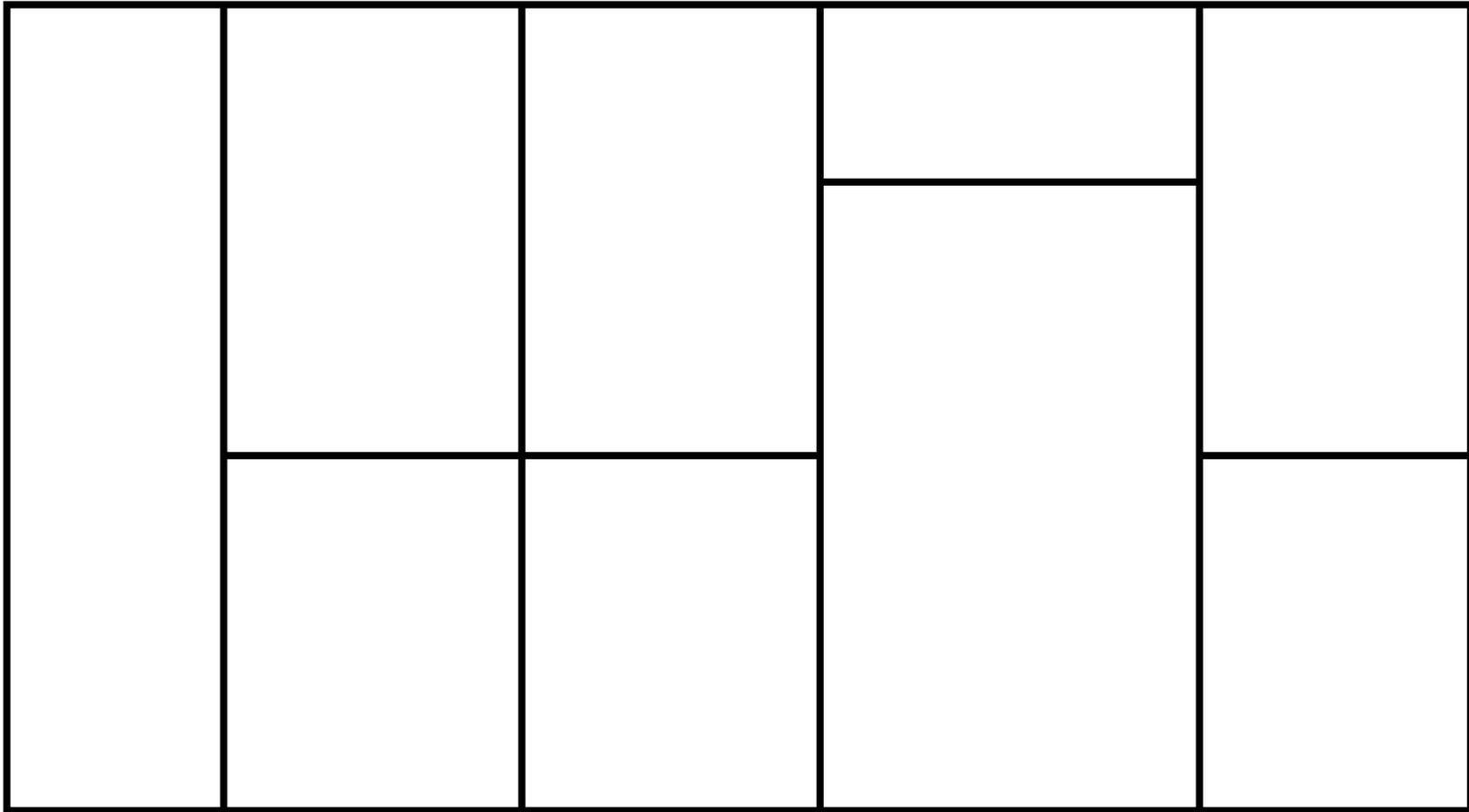
- The aim of this section of the Building Regulations is “glazing, with which people are likely to come into contact whilst moving in or about the building.
- If broken on impact, break in a way which is unlikely to cause injury or
- Resist impact without breaking
- Be shielded or protected from impact

**Critical Locations  
require Safety Glazing  
to be installed.**

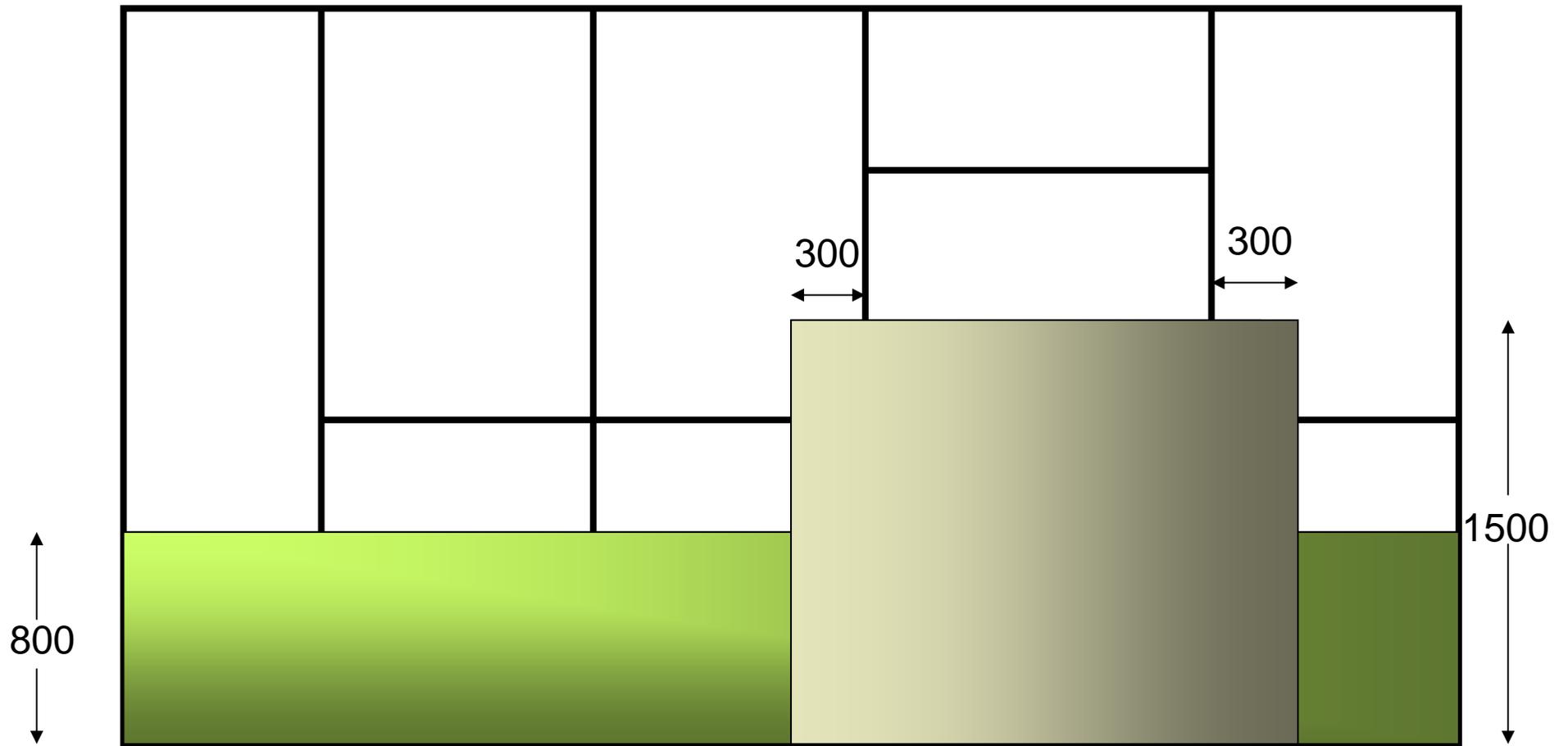
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# Critical locations

## Fully glazed screen and door.



# Critical locations



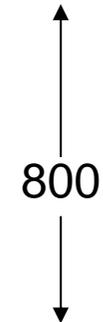
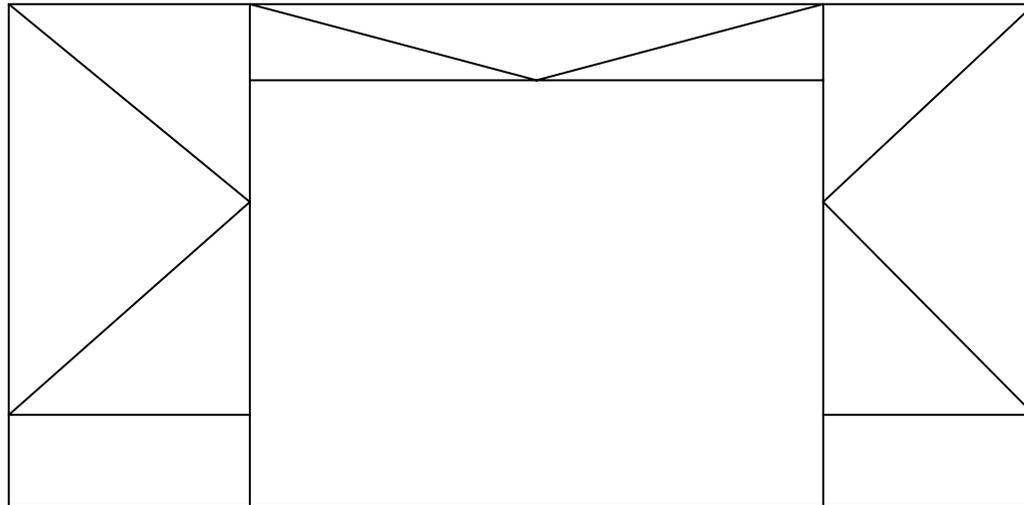
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# Critical Locations – Finished Floor level

- Top of floor furnishings

# Finished floor level



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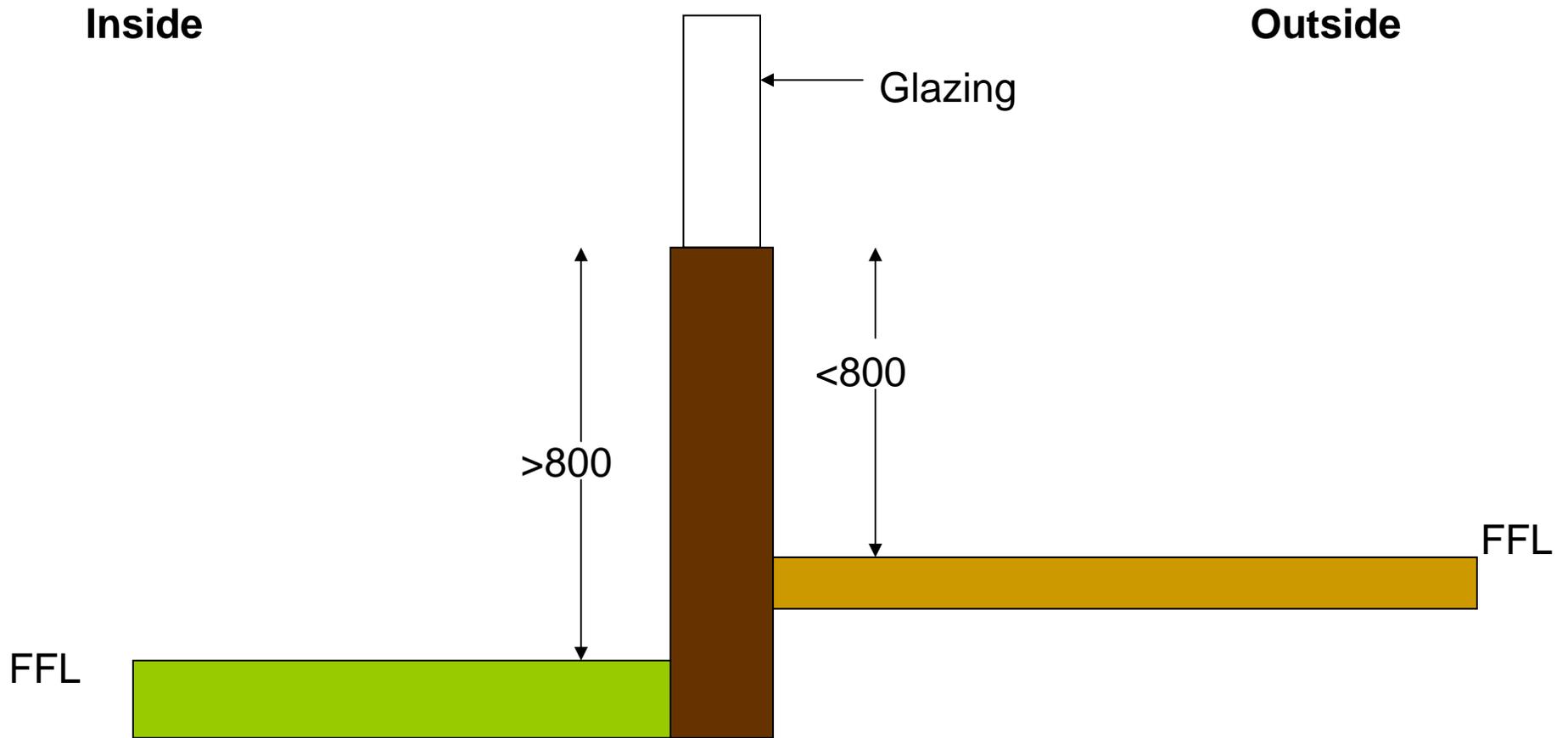


FFL  
FL

# Critical Locations – Finished Floor level

- Top of floor furnishings
- Ground outside

# Ground outside

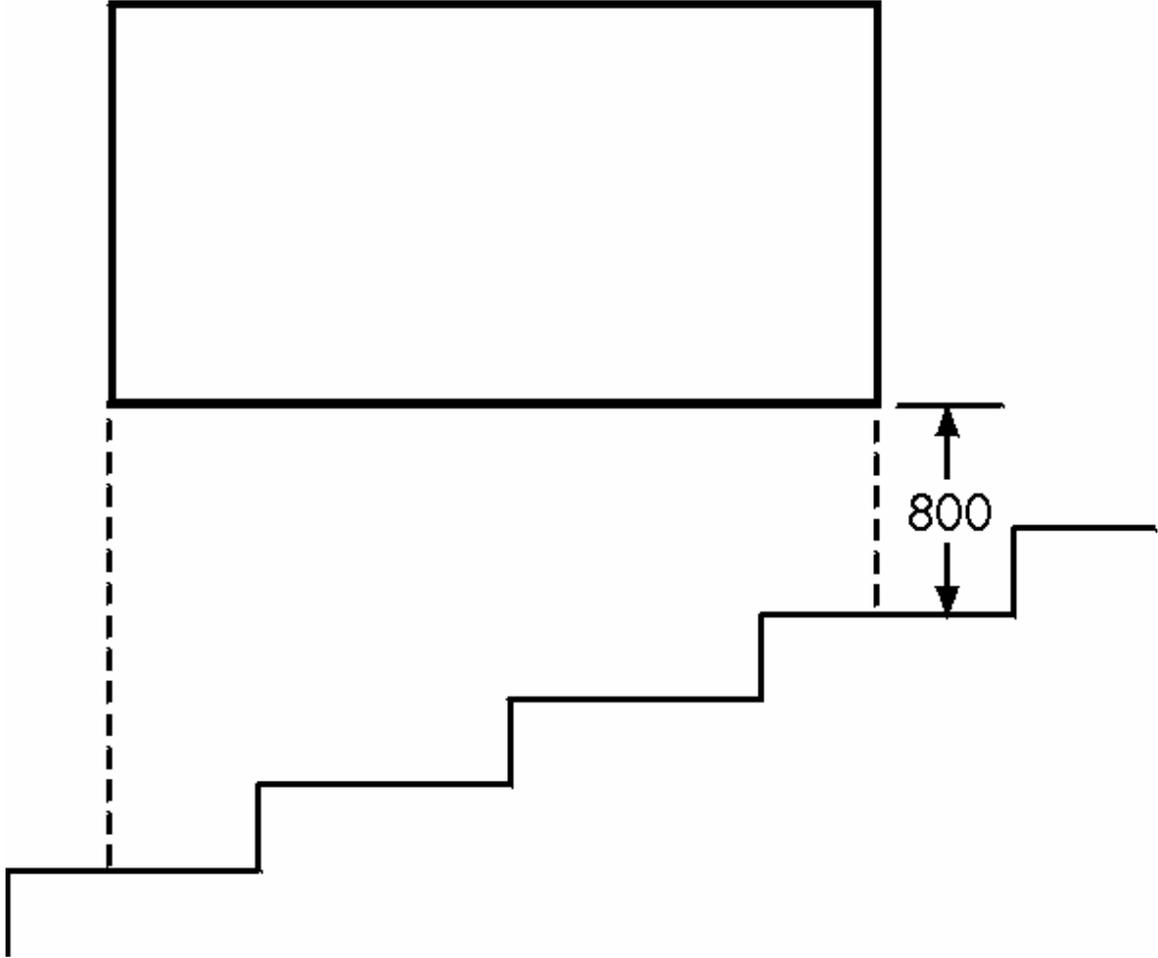


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# Critical Locations – Finished Floor level

- Top of floor furnishings
- Ground outside
- Stairs

# Critical Locations - stairs

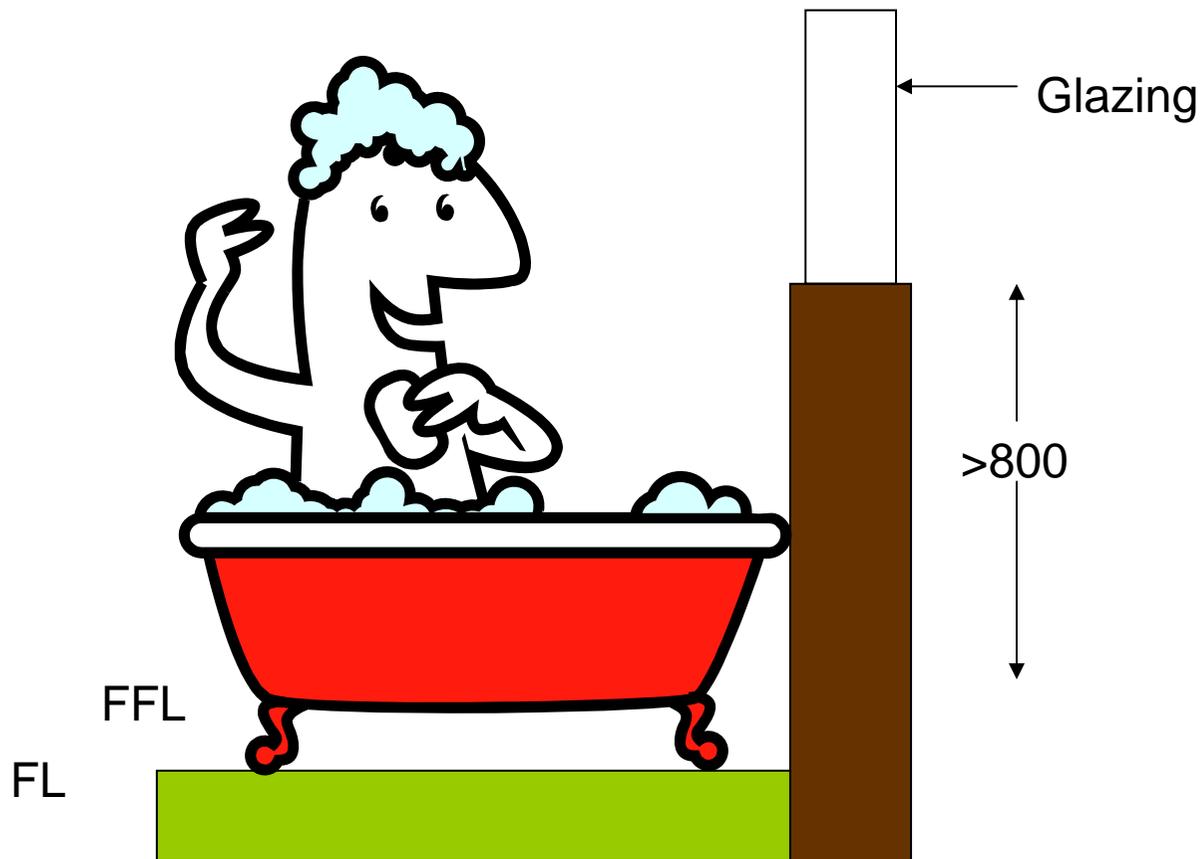


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# Critical Locations – Finished Floor level

- Top of floor furnishings
- Ground outside
- Stairs
- Baths and shower cubicles

# Critical locations over a bath



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Positioning of bath

# Exceptions for fitting safety glazing.

- Small panes
  - Smaller dimension  $<250\text{mm}$  and area  $<0.5\text{m}^2$
  - Glass  $\geq 6\text{mm}$  except traditional leaded lights and copper lights (4mm)

# Marking Safety Glass

- BS 6262-4:2005
  - Name or trade mark of manufacturer
  - European Glass Standard
  - Impact performance test BS EN 12600 classification

Glass Co.

EN12150

1

- Laminated Glass marking – when cut to size

**FENSA**

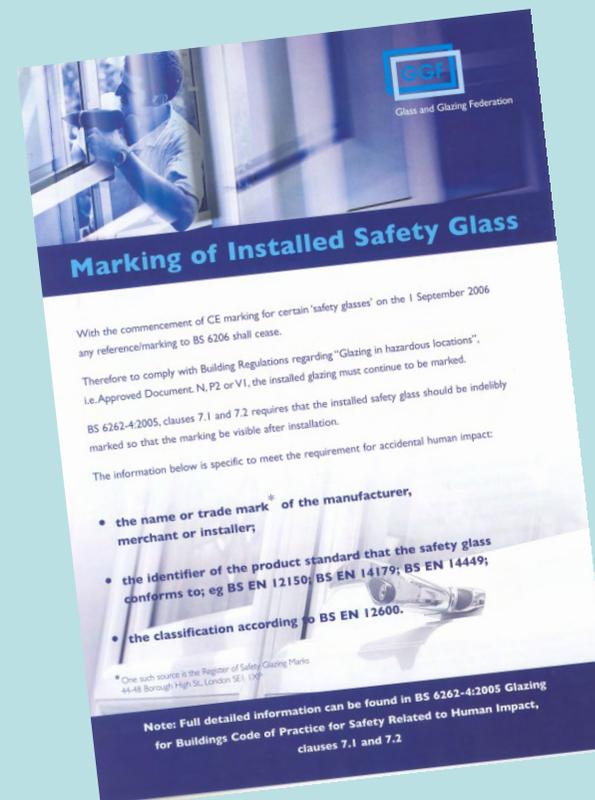
# Safety Glazing Checklist

## (how to prevent a non conformity)

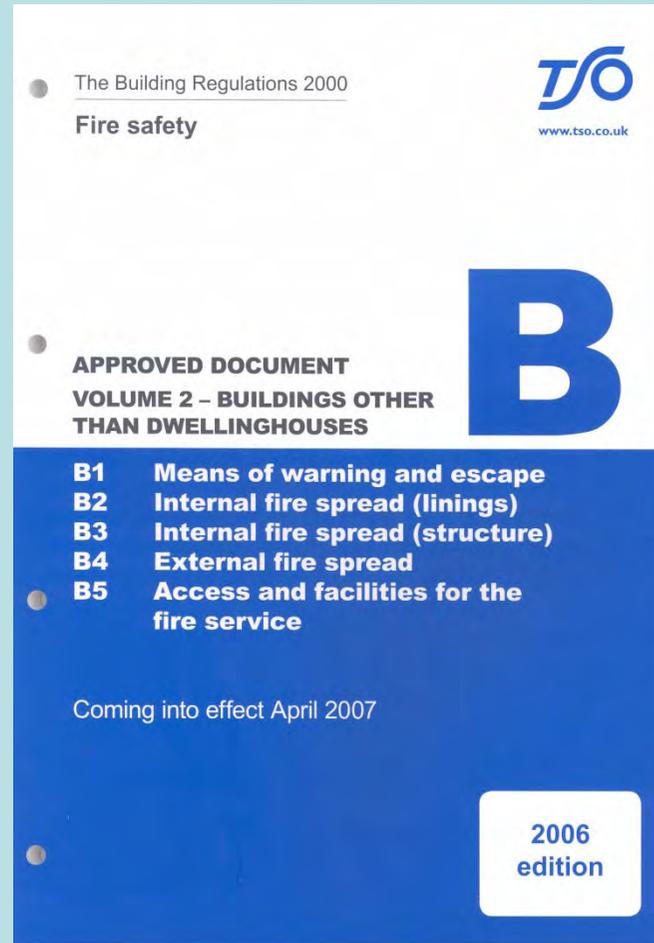
- Wrong glass supplied
- Stairwell location
- Location over a bath
- Measured wrong
- Wrong glass ordered
- Door and window ordered separately
- Floor covering not considered
- Safety mark not on the glass
- Safety mark not clear

# Any questions on Part N and Safety Glazing?

Additional information.



# Approved Document B Fire Safety



# Approved Document B

Requirement B1, The building shall be designed and constructed so that there are appropriate provisions for the early warning of fire, and appropriate means of escape in case of fire from the building to a place of safety outside the building capable of being safely and effectively used at all material times.

# New Build requirements

## Approved Document B Clause 2.8

- *“Any window provided for emergency egress purposes that provides for escape should comply with the following conditions:*

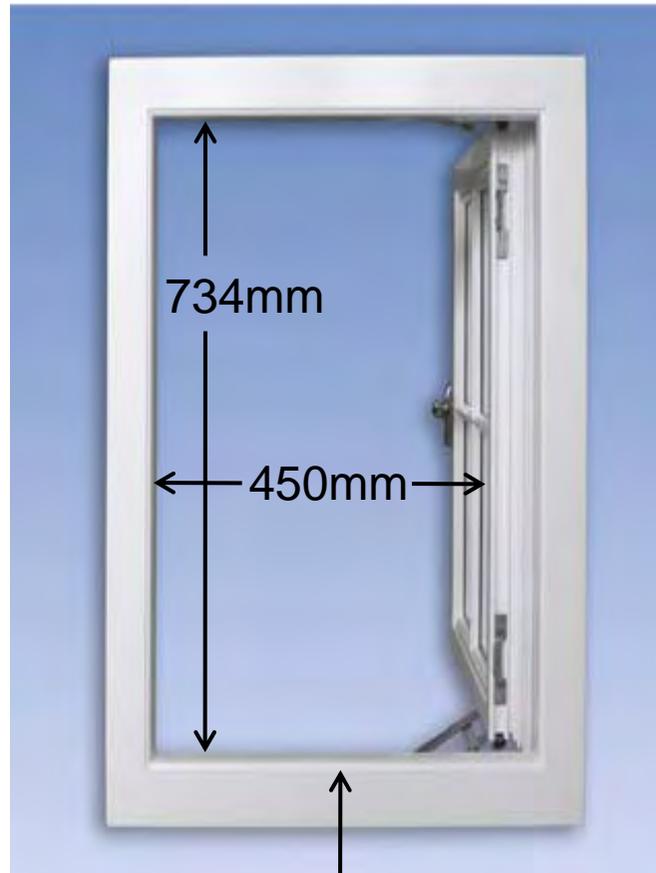
# Approved Document B Clause 2.8

- *The window should have an unobstructed openable area that is at least 0.33m<sup>2</sup> and at least 450mm high and 450mm wide (the route through the window may be at an angle rather than straight through). The bottom of the openable area should be not more than 1100mm above the floor”.*

# Egress window dimensions

- 450mm are the minimum dimensions
- 0.33m<sup>2</sup> opening area required
- 450 X 734 mm = 0.33m<sup>2</sup>

# Diagram of egress window



= 0.33m<sup>2</sup>

Dimensions are opening sizes for the window

Max 1100 mm

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FFL

# For replacement windows

- *For the purposes of part B1, where a window is located such that, in a new dwelling house, an escape window would be necessary and the window is of sufficient size that it could be used for the purposes of escape then:*
- *the replacement window opening should be sized to provide at least the same potential for escape as the window it replaces; or*
- *where the original window is larger than necessary for the purposes of escape, the window opening could be reduced down to the minimum specified*

# Where are Egress Windows required?

- Ground Floor

All habitable rooms except kitchens should:

- Open directly onto a hall leading to an exit or have an egress window installed

- Upper floors not more than 4.5m above ground level

All habitable rooms except kitchens in upper floors served by one stair case should:

- Have an egress window installed
- Direct access to a protected stairway

# Reduction in egress size

- If a replacement egress window cannot meet the standard size requirements as defined within Clause 2.8 of Approved Document B and the proposed replacement provides a smaller egress size than the original, dispensation needs to be approved by LABC

**This dispensation  
needs to be  
approved by your  
LABC prior to  
installation!!!**

**FENSA**

Not making the situation any  
worse.

What does this mean in practice?

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# Egress windows and hardware

- *Locks (with or without removable keys) and stays may be fitted to egress windows, subject to the stay being fitted with a release catch, which may be child resistant*
- *Windows should be designed such that they will remain in the open position without needing to be held in position by the person during their escape*

Any questions on Part B and  
Fire Egress?

# FENSA Technical Helpline

**0870 850 9957**

**FENSA**

Any Questions?

# Thank you for attending

**54 Ayres Street**  
**London, SE1 1EU.**  
Tel: +44 (0) 207 939 9100



## **FENSA Technical Helpline**

### **0870 850 9957**

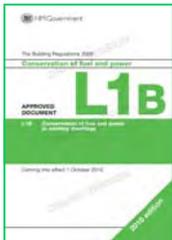
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# 'C' through to Building Regulations Compliance

KEY FACTS from 2010

FENSA

From 1st October 2010, your FENSA inspections will apply the revised Building Regulations



## Approved Document L1B 'Conservation of fuel and power in existing dwellings'

### All Replacement Windows Shall Achieve:

- Whole window U-value of at least 1.6 (W/m<sup>2</sup>K),
- Window energy rating of band C or better.
- Note: No longer can you generally comply with IGU's with a centre pane U-value of 1.2 (W/m<sup>2</sup>K). Special circumstances apply – more guidance to be provided by FENSA.

### All Replacement Doors

- Where a glazed panel within a door is equal to or greater than 50% of the entire door area (including the immediate frame but not adjacent glazed panels)
- Doors within the scope of AD L shall have a U-value not exceeding 1.8 (W/m<sup>2</sup>K).
- All other doors require a U-value not exceeding 1.8 (W/m<sup>2</sup>K).

### BFRC WER Scheme & Fees

BFRC WER Licence:  
£200 per licence per year

FENSA Authorised Retailer (buy in products already Licensed):

- \*£140/year (10 licences)
- \*£200/year (11-20 licences)
- \*£500/year (21-50 licences)

Non FENSA Registered Companies

\*£325/year (1-10 licences)

\*Prices include annual audit

### Transitional Arrangements

- Any contract signed before 1 October 2010, can comply with ADL1B 2006 guidance, as long as installation work starts before 6 April 2011.
- All contracts signed after 1 October 2010 must comply with the ADL1B 2010 guidance.



## Part F – Ventilation

If the window is re-designed (not exactly the same number and type of openers), ventilation could be made worse, therefore you must check you meet the following requirements for purge ventilation:

- For hinged or pivot window that opens 30 degrees or more, or for sliding sash windows, the area of the opening sash should be at least 1/20th of the floor area of the room.
- For a hinged or pivot that opens less than 30 degrees, the area of the opening sash should be at least 1/10th of the floor area of the room.

### Background Ventilation

#### Trickle Ventilators:

The guidance has not changed since 2006; the following applies:

- If trickle ventilators are fitted in the window that is being replaced then a trickle ventilator must be fitted to the new window or an appropriately sized air brick fitted. (Two stage locking handles are not acceptable as an alternative to trickle ventilators).
- If no trickle ventilators are fitted and two-stage locking handles are fitted in the windows being removed then either;
  - a) trickle vents can be fitted as an alternative, or
  - b) two-stage locking handles can be fitted or
  - c) appropriate air-bricks can be fitted.
- If no ventilation is provided in the windows being removed then a number of options are available to the consumer. Consideration should be given to the fitting of:
  - a) trickle vents, or
  - b) two-stage locking handles, or
  - c) air bricks.
- Matters should not be made worse and therefore the customer can in these circumstances opt not to fit ventilators as set out above.

### More Information

1) You can:

- Download the full seminar presentation for FREE
- Download your Certificate of Attendance for FREE
- Submit your feedback about the seminars

Go to FENSA registered businesses' website: [www.fensaonline.com](http://www.fensaonline.com) (click on Menu/View Attended Seminars)

2) FENSA Technical Helpline:

0870 8509957

3) DVD of seminar presentation from Glass and Glazing Federation. Cost £15. Available shortly. Contact Lis Chapelhow: T: 020 7939 9107 F: 0870 042 4266 [lchapelhow@ggf.org.uk](mailto:lchapelhow@ggf.org.uk)