Understanding fire-resistant glazing systems

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What is important when specifying and installing Fire-resistant Glazing Systems?

- The framing system
  - Timber
  - Steel
  - Aluminium
- The glass
- The glazing components/compounds
- Fire test or assessment evidence
- Quality of installation
Potential issues with Framing Systems

• In particular, with timber framing systems, the framing may be manufactured and installed by different contractors to the glazing contractor. The glazier must confirm:
  • The framing has been manufactured in accordance with the fire test or assessment specification
  • It is installed into the building fabric correctly
The Framing System

- Timber framing – critical factors
  - Species and density of timber used
  - Section sizes and profile
  - Rebate upstand size
  - Glazing bead profile, in particular:
    - Square edge top face or
    - Chamfered or beveled top face
  - Bead fixing details
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The Framing System

• Steel and aluminium frame systems
  • Generally supplied and fitted by a single company or contractor
  • Critical to ensure it is installed into the building fabric correctly

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The Fire-Resistant Glass

• Performance of Fire-Resistant Glass
  • When tested for Fire-Resistance, glass will be categorised for use in the UK as:
    • Exx (e.g. E30) – Integrity only glass, the number indicating the period it will provide protection
    • EIxx (e.g. EI60) – Integrity and insulation glass, the number indicating the period it will provide protection
    • EWxx (e.g. EW60) – Not recognized in UK
The Fire-resistant Glass

• **Marking of Fire-resistant Glass**
  • Glass to be used in fire-resistant systems should be permanently marked with the following in a visible location:
    • Manufacturers name, trading name or product tradename
    • Product standard e.g. BS EN 12150, BS EN 14449 etc.
    • Safety classification if appropriate
    • Fire-resistance e.g. E30, EI60 etc.
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Pilkington Pyrodur Plus (7mm)

EN 12150 = Toughened
EN 14449 = Laminated

Pilkington Pyrostop
30-20
EN 14449
1(B)1
142
2010
UK & Ireland

Pilkington Pyroclear
30-001
EN 12150
1(C)1
170
2012
UK & Ireland

Pilkington Pyroclear
30-007
EN 14449
1(B)1
154
2013
UK & Ireland

Excel Glass Ltd
2014

UK & Ireland
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Glazing components and compounds

• The glazing components and compounds must be as stated in the test or assessment evidence:
  • Substitution without supporting evidence is not allowed
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Quality of Installation

- Provided the framing material, glass and glazing components/compounds are as specified in the test or assessment evidence, the performance of the Fire-resistant Glazed System is reliant on:
  - The correct installation of the frame into the building fabric and
  - The fire-resistant glass being installed in the frame correctly using the materials specified
Quality of Installation

• The installation is as critical as the component parts of a barrier to fire
• The GGF has developed installer training based on 2 GGF documents:

   A Best Practice Guide in the Specification and Use of Fire-Resistant Glazed Systems

• Referenced in Approved Document B
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Quality of Installation

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  A Best Practice Guide in the Specification and Use of Fire-Resistant Glazed Systems
  and
  The Specification, Supply and Installation of Fire-Resistant Barriers containing Glass for Resistance against the passage of Fire and Products of Combustion

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Quality of Installation

• The GGF installer training workshop:
  • Knowledge based workshop
  • Knowledge assessment at end of course
  • Initial courses in Northern Ireland
  • Will be rolled out in England, Scotland and Wales during 2014
  • Delegates received a certificate to show attainment
  • Intend to move to a registered list and issue an approved installer card
What is the result if the wrong system, glass or components are used?

What happens if the quality of installation is not ‘up-to-standard’?

Getting it Wrong - Getting it Right
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