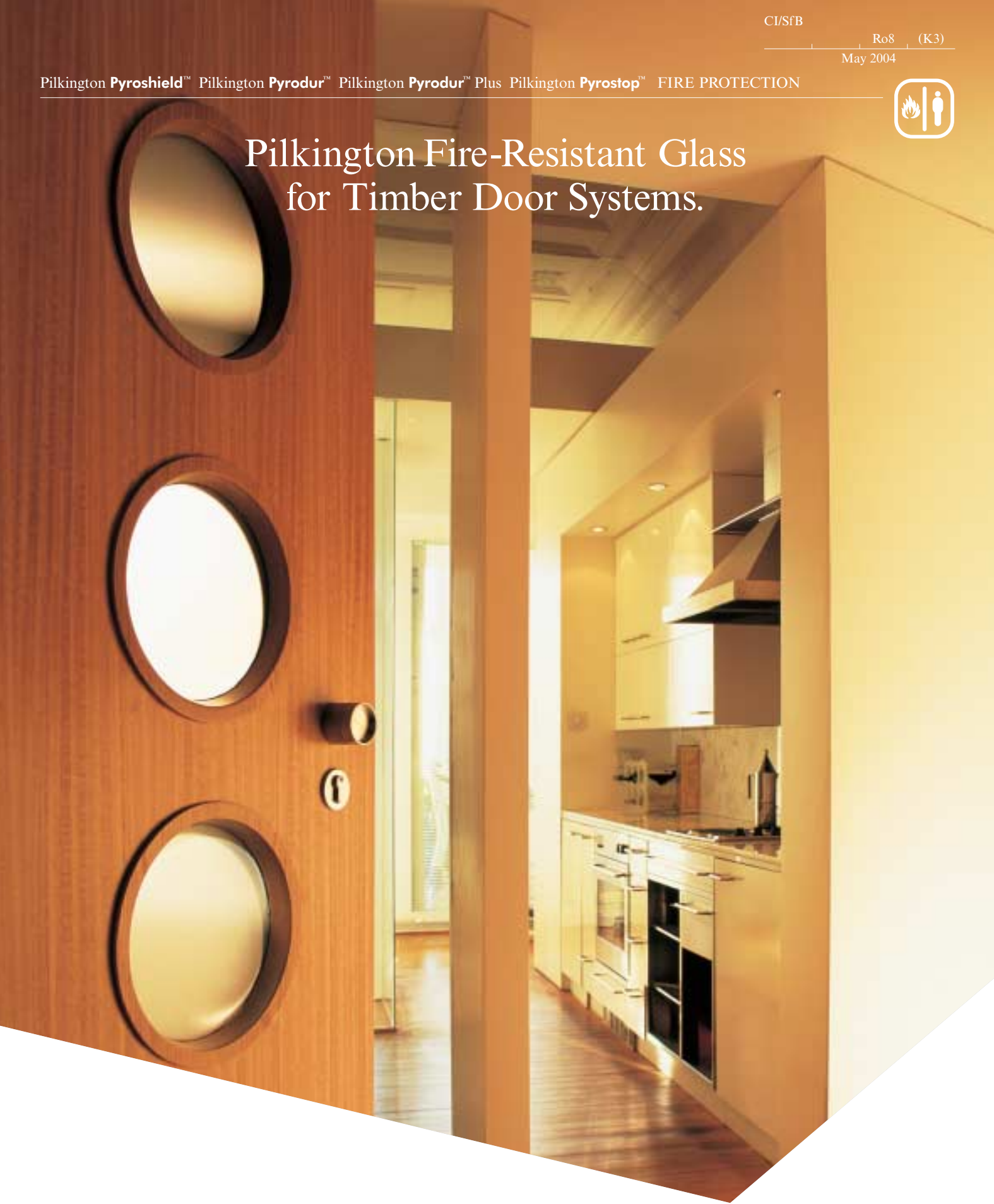




# Pilkington Fire-Resistant Glass for Timber Door Systems.



**PILKINGTON**

## Trust. In a fire it's more important than ever.

Specifying the right fire-resistant glass is a crucial decision.

It's important to know that the product specified and installed will perform as intended in a fire. That's why Pilkington has consistently invested in the development of its range of fire-resistant glazings, making it the name to trust.

At the forefront of fire-resistant glass innovation since introducing wired glass in 1896, we continue to offer high performance and high quality products that can be relied upon in a fire.

Readily available direct or through our national network of stockists, the current Pilkington range of fire-resistant products does exactly that, meeting the UK requirements concerning integrity, and insulation with integrity.

### Standards

We believe that where fire safety and protection is concerned, standard fire tests alone are not sufficient. To be sure of absolute confidence, we are committed to extensive testing over and above that required by international standards, so you can rely on each Pilkington product to consistently live up to performance demands.

The new pan-European EN standards have now started to replace national standards, and Pilkington has been involved in the development of these. For example, Pilkington **Pyrodur**<sup>™</sup> Plus is one of the first products of its type to demonstrate high levels of fire performance to the new standard, in not just one but a number of tests.

## Fire Product Classification and Performance.

### Integrity

The ability of a specimen of a separating element to contain a fire to specified criteria for collapse, freedom from holes, cracks and fissures and sustained flaming on the unexposed face.

### Insulation

The ability of a glazed screen or door to limit the temperature rise on the non-fire side to 140°C overall (or maximum of 180°C spot reading).

### Radiant Heat

The ability of the element of construction to reduce the probability of transmission of fire as a result of significant radiated heat, either through the element or from its unexposed surface to adjacent materials on the non-fire side.



Pilkington **Pyrodur**<sup>™</sup> Plus is the ideal choice for internal use in hospitals, schools, offices and many other public places.



Glass intumescence as shown above applies to Pilkington **Pyrostop**<sup>™</sup> and Pilkington **Pyrodur**<sup>™</sup>.

## Integrity, or ‘non-insulating’

### Pilkington **Pyroshield**<sup>™</sup>

The original fire-resistant glass, and still the most popular, thanks to its long track record, exceptional value and ease of handling, stocking and glazing.

#### Description

- A monolithic, wired glass providing integrity fire protection, even in softwood frames
- A wire mesh incorporated within the glass effectively holds the product in place in case of thermal shock, with a thicker gauge of wire used to produce an impact safety version: Pilkington **Pyroshield**<sup>™</sup> Safety
- Available in clear or texture (for obscuration and privacy) versions
- Tested and approved with a wide range of fire-resistant glazing gaskets and sealants

#### Performance

- Restricts the spread of flames, smoke and hot gases
- Achieves up to 60 minutes integrity in timber frames
- Maintains integrity even when fractured or sprayed with water
- Safety version achieves impact safety to Class C to BS 6206
- One of the world’s most extensively used fire-resistant glass products

### Pilkington **Pyrodur**<sup>™</sup> & Pilkington **Pyrodur**<sup>™</sup> Plus

A range of completely clear fire-resistant glass offering integrity and partial insulation through laminated intumescent interlayers.

#### Description

- A clear, multi-laminated fire-resistant glass
- The intumescent layer expands and turns opaque when exposed to heat, to form an effective barrier to smoke, radiant heat and flames and reduce panic
- Provides integrity and partial insulation with impact safety
- Clarity and options for decorative effects, e.g. sandblasting, make it ideal for use in doors and screens
- Tested and approved with a wide range of fire-resistant glazing gaskets and sealants
- Independently approved for use in a wide range of applications under the Certifire scheme

#### Performance – Pilkington **Pyrodur**<sup>™</sup>

- Restricts the spread of flames, smoke and hot gases
- Nominal 10mm and 13mm thickness
- Achieves up to 60 minutes integrity, together with partial heat insulation and Class B impact performance to BS 6206 and Class 1 (B) 1 to BS EN 12600: 2002

#### Performance – Pilkington **Pyrodur**<sup>™</sup> Plus

- Restricts the spread of flames, smoke and heat
- Ideal for internal glazing applications with its nominal 7mm thickness containing one specially designed intumescent layer
- Classified as having 30 minutes integrity but can achieve up to 40 minutes in tests, with insulation performance above 15 minutes and exceptionally low levels of transmitted radiant heat

Meets impact performance to:

- BS6206:1981 Class B
- BS EN 12600: 2002 Class 2 (B) 2 (ref TN0 TPD), and behaves as a laminated glass under impact



Pilkington **Pyroshield**<sup>™</sup> Safety.  
*St Mary's & St. Thomas Church of England School, St Helens.*



Pilkington **Pyrodur**<sup>™</sup> Plus.  
*Greaney Glass Ltd, Harbour Hotel, Co. Galway.*

## Insulation and Integrity

### Pilkington **Pyrostop**<sup>™</sup>

The clear alternative to a solid fire wall, combining a high level of fire performance in terms of insulation and integrity with impact protection and wide flexibility in a variety of applications.

#### Description

- A clear, multi-laminated fire-resistant glass, which both retains its integrity and insulates against heat transfer from a fire
- Forms an opaque barrier against smoke, flames and heat during a fire, helping to reduce panic during a building's evacuation
- Clarity, a choice of thicknesses and options for decorative effects, e.g. sandblasting, make it ideal for a wide range of applications
- Tested and approved with a wide range of fire-resistant glazing gaskets and sealants
- Independently approved for use in a wide range of applications under the Certifire scheme

#### Performance

- Restricts the spread of flames, smoke and hot gases
- Offers up to 120 minutes insulation and integrity in suitable glazing systems
- Provides impact safety up to Class A to BS 6206 and 1 (B) 1 to BS EN 12600: 2002
- Available in a range of thicknesses from 15 to 62mm, offering various levels of fire protection

### Choosing the right glass for your application

It is extremely important to make sure you have the right product for the right situation. Our highly experienced specialist sales and technical teams can give you all the help and guidance you need from the outset.

Table 1 summarises the test evidence for the Pilkington range of fire-resistant glass in timber doors.

Table 1. Fire performance table.

	Fire resistance (minutes)		Glass type	Door type	Test reference	Maximum pane size tested (mm)	BS 6206 Classification	BS EN Classification 12600	Sound Reduction R <sub>w</sub> (db)
	Integrity	Insulation							
<b>Integrity</b>	30	0	6/7mm Pilkington <b>Pyroshield</b> <sup>™</sup> Safety	2XGG Pattern 10 Double leaf single acting#	709A 709B FR1448	714 x 1026 635 x 1761 650 x 1770	C	3 (B) 3	32
	30	0	7mm Pilkington <b>Pyrodur</b> <sup>™</sup> Plus	Single leaf single acting Single leaf single acting# Double leaf single acting#	RF00137 RF03068 RF00138	726 x 1851 690 x 1818 644 x 1829	B	2 (B) 2	35
	30	0	10mm Pilkington <b>Pyrodur</b> <sup>™</sup>	Single leaf single acting Any tested doorset	RF1507 C81599	750 x 1770 920 x 1990	B	2 (B) 2	34
	60	0	10mm Pilkington <b>Pyrodur</b> <sup>™</sup>	Single leaf single acting	RF01024	494 x 794	B	2 (B) 2	34
	60	0	13mm Pilkington <b>Pyrodur</b> <sup>™</sup>	Single leaf single acting	RF04001	516 x 1630	B	1 (B) 1	35
<b>Insulation</b>	60	30	15mm Pilkington <b>Pyrostop</b> <sup>™</sup>	Single leaf single acting	C80885	616 x 1755	B	2 (B) 2	38
	60	30	18mm Pilkington <b>Pyrostop</b> <sup>™</sup>	Single leaf single acting	C80885	616 x 1755	A	1 (B) 1	39

# With side and overpanels



Pilkington **Pyrostop**<sup>™</sup>  
Kensington Village, London.



## Glazing Systems

Fire-resistant glass will only perform as intended when it is correctly installed with appropriate glazing materials in a suitable frame. For all fire-resistant glazing, the whole assembly must function as an integral system - that is the glass with the frame, beads, bead fixings, glazing materials and frame fixings all working together with absolute compatibility. Typical glazing details for Pilkington fire-resistant glass in timber doors are shown in figures 1 and 2.

### Timber systems

- Can be either hardwood or softwood (over a range of densities)
- For maximum integrity, beads should be attached with long wood screws driven at an angle
- The gap between beads and glass should be filled with an appropriate glazing material
- Following the correct guidelines, timber frames can achieve over 60 minutes integrity
- For thermal safety, it is important to advise at specification stage whether or not the glass is to be subject to solar radiation

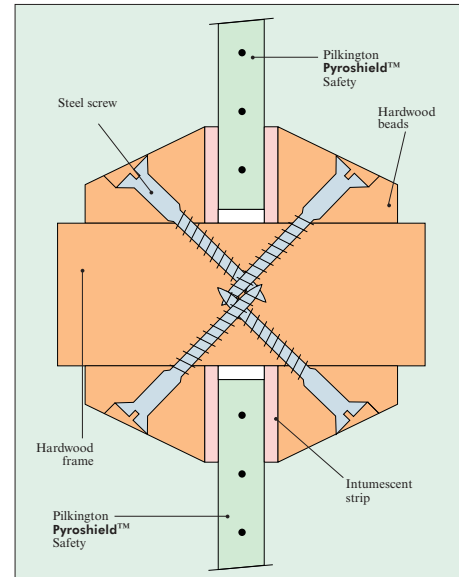


Fig. 1. Pilkington **Pyroshield™** Safety in Hardwood Timber Door. 30 minutes integrity.  
Fire Test Reference: FR 1448.

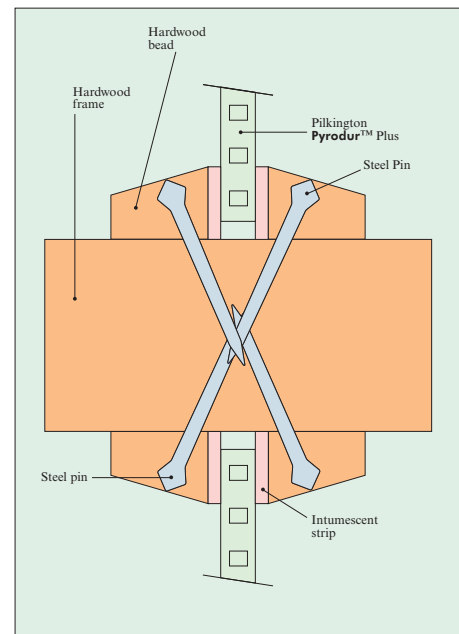


Fig. 2. Pilkington **Pyrodur™** Plus in Hardwood Timber Door. 30 minutes integrity.  
Fire Test Reference: RF00138.

**Thermal Safety** – The possibility of excessive thermal stress being developed in the glass due to solar radiation should be considered at all stages of design and construction. It is recommended that a thermal safety check is performed for all sloping installations or when used in Pilkington **Insulight™** units or secondary glazing.

**Handling & Storage** – Glass should be stored in dry conditions and out of direct sunlight, stacked upright and fully supported in a manner which prevents the glass from sagging. It should be stood on edge on strips of wood, felt or other relatively soft material. Special care should be taken to protect the glass, especially the edges, from impact damage (knocks, abrasions and excessive local pressure). Upon receipt and before glazing, each glass should be checked for damage. Damaged glass should not be glazed. Water must not be allowed to reach the edges of stacked glass as it can be drawn between the plates by capillary action and cause damage which may affect fire performance. The glass must be protected from site contamination such as welding, cement, plaster products or adhesives.

Glazing and handling details are available on request.

Insulating glass units incorporating Pilkington fire-resistant glass have been successfully tested and combined with low E glass help in meeting the requirements of Part L (England & Wales) and Part J (Scotland). Detailed glazing information can be found in our published fire test summaries. We recommend that glazing is carried out by a FIRAS accredited installer.

**Further details** – For further advice, or to receive a copy of our CD-ROM including all performance details, please call **01744 692000**.

This publication gives a general description of the product and materials. It is the responsibility of the users of this document to ensure that the proposed application of the product is appropriate and that such application complies with all the local and national legislation, standards, codes of practice and other requirements. To the extent allowed by law, Pilkington United Kingdom Limited hereby disclaims all liability howsoever arising from any error in or omission from this publication and all consequences of relying on it. Pilkington **Pyroshield™**, Pilkington **Pyrodur™** and Pilkington **Pyrostop™** are trademarks of the Pilkington Group.



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