Fire Resistant Glazing Systems
protecting against smoke and fire
Fire and smoke protection measures are essential, life-saving precautions in a building. What’s more, they protect the property from the devastating consequences of the fire itself, and the damaging effects of hot and cold smoke. So it’s essential to get the product selection right, every time.

Lorient has a respected reputation for designing and manufacturing a wide range of products for fire and smoke containment. Products are also designed with acoustic, thermal and weather containment in mind, as well as accessibility – so you can be assured that a Lorient system provides an integrated, cost-effective solution.

With 35 years’ experience and accumulated knowledge, we pride ourselves on offering ground-breaking innovations, underpinned by technical excellence and exceptional quality. Our dedicated R&D centre not only generates successful product developments for Lorient; it also allows us to work in partnership with customers to develop and test their own products too. Our indicative fire test furnace is particularly popular, giving customers real insight into their own products’ performance and helping to save substantial testing costs.

Always keen to keep raising the bar, we are committed to gaining third party certification for our products wherever a suitable scheme exists. Many products hold CERTIFIRE certification, and we also hold approvals from both the BBA and IFC.

We embrace the highest management standards too, and hold both BS EN ISO 9001:2008 and BS EN ISO 14001:2004 certificates for our quality and environmental management systems. Achieving ISO 14001 is just one part of our ongoing commitment to operate in a sustainable way; many initiatives are planned and already underway to reduce materials and energy usage, as well as waste.

In addition to our UK and Europe head office, we have a number of operations around the world; in North America, Hong Kong, Singapore and Australia. Furthermore, we have strong links in India and the Middle East, which means that we’re able to deliver the right solutions locally to our customers throughout the world. By keeping abreast of technical developments and changes to codes, regulations and standards across the continents, we can ensure we’re always providing the highest level of expertise. From advice to testing, new product development to manufacture – we work best in partnership with you.

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Images on facing page, 3 and 18 supplied with kind permission of Leaderflush Shapland
Fire and Smoke – Life Threatening Forces

On average 388 people are killed and 11,100 are injured* in fires each year in the UK alone. Many of the casualties are attributable to breathing the toxic products of combustion from a remote fire.

Fire and smoke also cause extensive damage to building fabric and contents. £2.52 billion* per annum is the estimated total of fire-related losses. The majority of these deaths, injuries and losses occur in buildings where fire and smoke protection measures have been inadequate.

Design Needs

When fire breaks out in a building the threat is twofold. Firstly, there is the fire itself and the hot smoke generated in the immediate vicinity. Secondly, there is cold smoke which will spread rapidly through the building, threatening people and property some distance from the fire. The Building Regulations take both these threats into account, and supporting documents give criteria for how they can be managed. Details can be found in Approved Document B (England & Wales), Technical Booklet E (N. Ireland), and Technical Handbook Section 2 (Scotland).

The Regulations require large buildings to be divided into smaller fire and smoke resistant ‘compartments’, to reduce the risk of damage to the building as a whole and also to save lives in the case of a fire. Building design becomes complex when the compartments need to be linked in some way – essential to make the building usable. Every time an aperture is cut into one of the compartment boundaries (for example, to install a door in a fire resistant wall, or to pass ductwork through a wall or ceiling) the aperture must be filled with something that will preserve the fire and smoke integrity of the compartment. That’s the role of Lorient’s products – to work with the surrounding elements of the building to ensure the fire and smoke resistant compartments are maintained. Our fire and smoke seals can be fitted into fire rated doors; our glazing products can be fitted into doors, screens or fire rated partitions; our air transfer grilles can be installed into doors, walls and ducts.

Glazing Systems

Glazed panels or complete glazed screens are often required to allow vision and natural light through fire-rated internal walls and doors. Gaps, joints and interfaces between dissimilar materials invariably form points of weakness. Provision needs to be made to seal these effectively.

The Lorient solution is to fit fire resistant glass secured using one of our fire resistant glazing systems. These hold the glass firmly in place during normal use, but in the event of fire the intumescent material expands, securing and insulating the glass and protecting the surrounding timber.

Our glazing systems are designed to minimise smoke transfer, yet fit tightly on the perimeter of the glass and eliminate undesirable rattle at the same time.

Relevant Requirements

There are several aspects of the Building Regulations that must be considered in conjunction with each other when specifying and installing fire resistant glazing systems.

Fire and Smoke: The requirements for fire and smoke containment with respect to ‘means of escape’ are presented in Approved Document B (England and Wales), Technical Handbook Section 2 (Scotland), and Technical Booklet E (N. Ireland).

Safety and Impact Resistance: Approved Document N (England & Wales) and Technical Booklet V (Northern Ireland) give guidance and requirements affecting safety in use, particularly impact resistance. A distinction is drawn between glass which is fixed and that which moves (as in doors).

Sound: Guidance and requirements are found in Approved Document E (England and Wales), Technical Booklet G (N. Ireland) and Technical Handbook Section 5 (Scotland). Document E gives specific acoustic performance requirements for door assemblies in a number of situations.

In ‘dwelling-houses, flats and rooms for residential purposes’ (Requirement E1), a minimum acoustic performance of 29dB Rw is stated. For schools (Requirement E4), a minimum of 30dB Rw is required – 35dB Rw for music rooms. Please refer to page 3 for further details.

Accessibility: Approved Document M (England and Wales), Technical Booklet R (N. Ireland) and Technical Handbook Section 4 (Scotland) specify accessibility requirements for the benefit of everyone using buildings. They detail the size and location of glazed panels in doors in various situations, in order to promote safety and accessibility. Visual contrast on the leading edge of doors is also included, as are opening and closing forces for ease of door operation, threshold height and door width requirements.

Relevant Standards

There are several British Standards which relate to the products and solutions featured in this brochure. They include:


European Standard

- BS EN 1634-1: 2008: Fire resistance and smoke control tests for door, shutter and, openable window assemblies and elements of building hardware. Fire resistance tests for doors, shutters and openable windows in the design, management and use of buildings.

*Source: Communities and Local Government Website 2012
Fire Protecting Glazed Apertures

Glazed panels are often required in fire resistant walls and doors. In door assemblies, especially those on circulation routes, glazed apertures allow people to see others approaching from the opposite direction: they also allow fire and smoke to be seen without opening the door, thereby making a real contribution to safety.

When forming a glazed aperture in a fire resistant door or wall it’s essential that fire resistant glass is used. The most commonly specified is Georgian wired glass. Our glazing systems may also be used with most other types of fire rated glass: details are shown on pages 11 – 16 of this brochure, or contact our Technical Services team for further information.

Our glazing systems are designed to prevent or delay possible modes of failure in either the glass or its surroundings.

Acoustic Implications

Following the 2003 amendments to Approved Document E to the Building Regulations (England & Wales), door assemblies in many situations are now required to provide acoustic performance. To achieve the specified performance requirement (a minimum of 29dB Rw), it’s essential to ensure the door assembly is fitted with an appropriate sealing system at the perimeter and threshold. Further information on acoustic sealing can be found in our Acoustic Sealing Systems for Door Assemblies brochure.

Glazed panels may be incorporated in doors without a major loss of acoustic performance, provided that thick enough glass is used, the size of the aperture is limited and an appropriate sealing system is utilised. Conventional Georgian wired glass has been tested in conjunction with our System-36/6 PLUS glazing gasket and provides optimum acoustic performance for most types of door construction, including FD30 / FD30S. By this method, up to 0.16m² eg: 800mm x 200mm or 650mm x 250mm can be incorporated in a door assembly, without any significant loss of acoustic performance. Please call our Technical Services team on 01626 834252.

Operation

In every day use our fire resistant glazing systems offer firm support with a degree of flexibility which absorbs shocks and minimises glass rattle. When exposed to fire the intumescent material expands forming a stable insulating seal which holds the glass firmly so it does not slump as it progressively softens.

System-36 PLUS and System-63Ø

System-90 PLUS

System-36 PLUS and System-63Ø in normal “cold” condition

System-36 PLUS and System-63Ø operating in “hot” condition

System-90 PLUS operating in “cold” condition

System-90 PLUS operating in “hot” condition
Product Range

Our range of fire resistant glazing systems can be used to specify and manufacture glazed doors and screens which provide fire resistance from 30 minutes up to 120 minutes.

A wide range of applications and designs have been tested and approved: for further information see pages 11-16.

The features and attributes of the various Lorient systems are described in this section, but further information – including sizes, shapes and finishes – can be found on pages 6-9.

System-36 PLUS

System-36 PLUS is a flexible U-shaped glazing gasket designed for 30 minute fire resistant doors and screens. When using approved glass types (please refer to CF5060 for the full range of glass types) it provides up to 60 minute fire resistance for doors and screens.

- Each size variant features a unique colour on the spine for easier identification.
- Available to suit different thicknesses of glass from 5mm to 23mm.
- Supplied coiled in a box so it’s easily dispensed and cut to length, avoiding wastage in off-cuts.
- Suitable for use with a range of standard fixing beads.
- Flexible enough to be fitted to curved corners and circular vision panels.

FF1

FF1 (Flexible Figure 1) is designed for use with glazed apertures in 30 minute fire resistant doors.

- Comprises a pair of bead applied intumescent strips.
- Flexible, quick and easy to install.
- Available in a choice of colours.
- Suitable for use with a variety of fire resistant glass types.
- Unique design which enables tolerances between door, bead and glass thicknesses to be accommodated.

RF1™

RF1™ is a versatile new bead-applied glazing system for 60 minute fire resistant doors and screens.

- Comprises a pair of bead applied intumescent glazing seals and an intumescent liner.
- Premium aesthetics – the caps are the only visible elements when fitted – and are available in a variety of colours to harmonise with the door.
- For use with pins which are discreet and quick to fix or alternatively secure with screws.
- Unique design which enables tolerances between door, bead and glass thicknesses to be accommodated.
System-63Ø is a variant of System-36 PLUS which has been designed for use in circular apertures in 60 minute fire resistant doors.
- A cost-effective solution to the problem of incorporating circular glazed apertures.
- Use with an intumescent liner.
- Easy to fit.

System-90 PLUS is designed for 60 minute fire resistant doors and screens. When using a suitable door and screen construction (such as Georgia-Pacific system for high performance fire door assemblies) it provides 90 minute fire resistance. 120 minute fire resistance can be attained only when a suitable door construction is used.
- Comprises a U-shaped PVC profile containing an intumescent core and an intumescent liner, and beads of wood or metal.
- Tested with a range of glass types.

System-321 is the complete glazing solution for 30 minute fire resistant doors.
- A unique clip-together glazing system.
- Supplied as a complete pack of product, it contains everything required to glaze one aperture in a FD30 door leaf simply, safely and efficiently.
- A choice of sizes, bead finishes and glass types is offered.

System-321
Three steps, two minutes, one system

System-90 PLUS

System-63Ø
### Dimensions and Comments

Detailed fitting instructions for all systems are supplied with the products, and are available on request or from our website. Please refer to fitting instructions before commencing installation.

<table>
<thead>
<tr>
<th>System-36/6 PLUS</th>
<th>System-36/7 PLUS</th>
<th>System-36/10 PLUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>7mm</td>
<td>8mm</td>
<td>11mm</td>
</tr>
<tr>
<td>15mm</td>
<td>15mm</td>
<td>17.5mm</td>
</tr>
<tr>
<td>25mm</td>
<td>25mm</td>
<td>26mm</td>
</tr>
</tbody>
</table>

**LG1512 PLUS** suitable for use with 6mm - 7mm fire rated glass  
**LG1513 PLUS** suitable for use with 7mm - 8mm fire rated glass  
**LG1717 PLUS** suitable for use with 9mm - 11mm fire rated glass

### Sodium silicate intumescent liner

- Liner is required for flaxboard substrates below 500kg/m³

### Standard lengths

- 60m coils
- 60m coils
- 30m coils

### Finish

- black with red spine
- black with blue spine
- black with green spine

### Glazing beads

Glazing beads are required on both sides of the glass. All beads are available in the following finishes although other species can be supplied.

#### Hardwood finishes:
- Oak, Beech, Sapele, Maple.

- **LG1321** for 44mm thick doors or rebated screen frames  
- **LG1321** for 44mm thick doors or rebated screen frames  
- **LG1521** for 44mm thick doors or rebated screen frames

Note: Hardwood beads are available for System-36/6 PLUS and System-36/7 PLUS (min density 600 kg/m³ for door beading and min 640 kg/m³ for screen beading). Hardwood or softwood beads are available for System-36/10 PLUS and System-36/15 PLUS (min density 550 kg/m³). Hardwood beads are available for System-36/23 PLUS (min density 550 kg/m³).

### Fixing of beads:

- pinned using 40mm panel pins at 200mm nom. centres  
- pinned using 40mm panel pins at 200mm nom. centres  
- screwed using No.8 x 45mm countersunk screws at 200mm nom. centres
**System-63Ø**

LG2715 suitable for door application use only with 6mm Georgian wired glass or Pyran-S®

Liner is required for flaxboard substrates below 500kg/m³

No liner is required

30m coils

25m coils

50m coils

black with orange spine

black with white spine

black

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**System-36/15 PLUS**

LG2022 PLUS suitable for use with 14mm - 16mm fire rated glass

Liner is required for flaxboard substrates below 500kg/m³

30m coils

black with orange spine

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**System-36/23 PLUS**

LG2229 PLUS suitable for use with 23mm Pyrostop®, 23mm Pyranova® and 23mm Fireswiss Foam glass types. System for screens only

No liner is required

25m coils

black with white spine

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**System-36/23 PLUS**

LG2020 for unrebated screen frames

Note: Timber beads for System-630 must be hardwood only (min density 615 kg/m³)

LG2229 PLUS suitable for use with 23mm Pyrostop®, 23mm Pyranova® and 23mm Fireswiss Foam glass types. System for screens only

LG2020 for unrebated screen frames

LG2229 PLUS suitable for use with 23mm Pyrostop®, 23mm Pyranova® and 23mm Fireswiss Foam glass types. System for screens only

Note: All dimensions are subject to manufacturing tolerances.

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**System-63Ø**

LG2022 PLUS suitable for use with 14mm - 16mm fire rated glass

Liner is required for flaxboard substrates below 500kg/m³

25m coils

black with orange spine

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**System-36/15 PLUS**

LG1720 for unrebated screen frames
timber bead for 44mm thick FD30 doors also available

screwed using No.8 x 45mm countersunk screws at 200mm nom. centres

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**System-36/23 PLUS**

LG1721 for 54mm thick doors or rebated screen frames

screwed using No.8 x 45mm countersunk screws at 200mm nom. centres

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**System-36/23 PLUS**

LG1720 for unrebated screen frames
timber bead for 44mm thick FD30 doors also available

screwed using No.8 x 45mm countersunk screws at 200mm nom. centres

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**System-36/23 PLUS**

LG2020 for unrebated screen frames

screwed using No.8 x 45mm countersunk screws at 200mm nom. centres

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**System-63Ø**

LG2715 suitable for door application use only with 6mm Georgian wired glass or Pyran-S®

pinched using 40mm panel pins at 200mm nom. centres

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**System-36/15 PLUS**

LG2022 PLUS suitable for use with 14mm - 16mm fire rated glass

Liner is required for flaxboard substrates below 500kg/m³

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**System-36/23 PLUS**

LG2229 PLUS suitable for use with 23mm Pyrostop®, 23mm Pyranova® and 23mm Fireswiss Foam glass types. System for screens only

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**System-36/23 PLUS**

LG2020 for unrebated screen frames

screwed using No.8 x 45mm countersunk screws at 200mm nom. centres

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**System-36/23 PLUS**

LG1720 for unrebated screen frames
timber bead for 44mm thick FD30 doors also available

screwed using No.8 x 45mm countersunk screws at 200mm nom. centres
FIRE RESISTANT GLAZING SYSTEMS

Dimensions and Comments

Detailed fitting instructions for all systems are supplied with the products, and are available on request or from our website. Please refer to fitting instructions before commencing installation.

RF1™

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>24mm x 4mm x 6.5mm</td>
<td>suitable for use with a variety of fire rated glass types for both doors and screens</td>
</tr>
</tbody>
</table>

RG2704

- A sodium silicate liner (BS5402) is required.
- The bead should be hardwood excluding Ash and Beech (min density 610 kg/m³)

FF1

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.5mm x 2mm x 3.5mm</td>
<td>suitable for use with a variety of 5mm – 7.2mm fire rated glass types. FF1 is a two-strip system for doors only. A strip must be fitted on both sides of the glass</td>
</tr>
</tbody>
</table>

GP1702

- For flaxcore doors, use with a 6mm hardwood liner (min density 640 kg/m³), intumescent liner LX4402, or saddle bead (min density 640 kg/m³)

Sodium silicate intumescent liner

- A sodium silicate liner (BS5402) is required.
- For flaxcore doors, use with a 6mm hardwood liner (min density 640 kg/m³), intumescent liner LX4402, or saddle bead (min density 640 kg/m³)

Standard lengths

- 1 pack comprises 2 No. x RG2704 in 2.1m and 2 No. x B25402 in 1.050m – minimum order quantity 10 packs
- 50m coils, 5 coils per box – minimum quantity 1 box

Finish

- black profile with white, cream, grey, light brown, dark brown and black caps
- black as standard: white and light brown to special order

Glazing beads

Glazing beads are required on both sides of the glass. All beads are available in the following finishes although other species can be supplied.

Hardwood finishes:
Oak, Maple, Sapele.

RG2704

- The bead should be hardwood excluding Ash and Beech (min density 610 kg/m³)
- Bead dimension could vary depending on glass type and door thickness

Fixing of beads:

- pin or screw into place using 50mm long steel pins at 150mm nom. centres, or steel screws 50mm long (No.8) at 150mm nom. centres
- pinned using 40mm long steel pins at 150mm nom. centres; or steel screws 40mm long (No. 8) at 150mm nom. centres
FIRE RESISTANT GLAZING SYSTEMS

CERTIFIRE Certificate Nos. CF185, CF201, CF325 / CF327, CF5033 / CF5060

CERTIFIRE is an accredited independent product conformity scheme operated by Exova Warringtonfire. The purpose of the scheme is to set benchmark quality and performance requirements which go beyond simply passing a single fire test.

CERTIFIRE quality and performance assessment schedules for fire resistant glazing systems require:
- proven performance when tested in accordance with appropriate British Standards;
- consistent quality achieved under the disciplines of a recognised quality assurance scheme, for example BS EN ISO 9001:2008;
- accountability – all products or packaging must be permanently marked so they can be easily identified;
- proven performance and compatibility with a range of glass types;
- proven performance in conjunction not only with rigid framing systems but also with door leaves which are relatively flexible under fire exposure;
- proven performance in either single or multi-pane systems.

In addition, the manufacturing process is subject to random, unannounced audits and, periodically, products are removed for re-testing and performance verification.

Note: All dimensions are subject to manufacturing tolerances.
Application Details

The following pages show the levels of protection provided by our fire resistant glazing systems when used in doors and screens, and with different shaped and sized glazed apertures.

Please note that the maximum glass sizes shown on the following pages relate to our test evidence. However, the test evidence for the door leaf being used will show the maximum glass size possible, and this may be smaller than the dimensions given in this brochure. Please always refer to the test evidence for the door leaf being used, and in case of any query please contact our Technical Services team on 01626 834252.

Use of symbols

- signifies a door leaf with a single rectilinear glazed aperture
- signifies a door leaf with two rectilinear apertures including 2XGG joinery doors
- signifies a door leaf with a single circular aperture
- signifies a door leaf with a long vision panel
- signifies a glazed screen or partition
- signifies a glazed screen with mullions and transoms
indicates that the application detail shown provides protection against fire and hot smoke
indicates in minutes the fire protection provided by the door or screen

Product Selector Table for Fire Resistant Glazing Systems

<table>
<thead>
<tr>
<th>Level of Protection</th>
<th>System</th>
<th>Doors</th>
<th>Screens</th>
</tr>
</thead>
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<tr>
<td></td>
<td></td>
<td>page 11</td>
<td>page 11</td>
</tr>
<tr>
<td>30</td>
<td>System-36/6 PLUS</td>
<td>page 11</td>
<td>page 11</td>
</tr>
<tr>
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<td>System-36/7 PLUS</td>
<td>page 11</td>
<td>page 11</td>
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<tr>
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<td>System-36/10 PLUS</td>
<td>page 11</td>
<td>page 11</td>
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<tr>
<td></td>
<td>System-36/15 PLUS</td>
<td>page 11</td>
<td>page 11</td>
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<tr>
<td></td>
<td>FF1</td>
<td>page 11</td>
<td>page 11</td>
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<tr>
<td>60</td>
<td>System-36/15 PLUS</td>
<td>page 13</td>
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<tr>
<td></td>
<td>System-90 PLUS</td>
<td>page 13</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>System-63Ø</td>
<td>-</td>
<td>-</td>
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<tr>
<td></td>
<td>System-36/23 PLUS</td>
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<td>RF1™</td>
<td>page 13</td>
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<tr>
<td>90</td>
<td>System-90 PLUS</td>
<td>-</td>
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</tr>
<tr>
<td>120</td>
<td>System-90 PLUS</td>
<td>page 14</td>
<td>-</td>
</tr>
</tbody>
</table>
Doors min. 40mm (2xGG joinery door) and 44mm (single pane door)

<table>
<thead>
<tr>
<th>System</th>
<th>Glass Types</th>
<th>Max. Pane Height</th>
<th>Max. Pane Width</th>
<th>Max. Pane Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>System-36/6 PLUS</td>
<td>6mm Pyrotuf®</td>
<td>1300mm</td>
<td>506mm</td>
<td>0.598m²</td>
</tr>
<tr>
<td>System-36/6 PLUS</td>
<td>5mm Firelite® 6mm Pyroshield® 2 6mm Pyran-S® 6mm Pyrocet®</td>
<td>1482mm</td>
<td>580mm</td>
<td>0.688m²</td>
</tr>
<tr>
<td>System-36/7 PLUS</td>
<td>Pyrogard® C/W 7mm 7.5mm Pyrodur® Plus</td>
<td>875mm</td>
<td>750mm</td>
<td>0.66m²</td>
</tr>
<tr>
<td>System-36/7 PLUS</td>
<td>7mm Pyrostem® 8mm Pyran-S®</td>
<td>1482mm</td>
<td>580mm</td>
<td>0.688m²</td>
</tr>
<tr>
<td>System-36/10 PLUS</td>
<td>Pyranova® 15 S2.0</td>
<td>1800mm</td>
<td>600mm</td>
<td>1.08m²</td>
</tr>
<tr>
<td>System-36/10 PLUS</td>
<td>10mm Pyruan® 11mm Pyranova® 15 S2.0</td>
<td>1800mm</td>
<td>600mm</td>
<td>1.08m²</td>
</tr>
<tr>
<td>System-36/15 PLUS</td>
<td>15mm Pyrostop®</td>
<td>1790mm</td>
<td>630mm</td>
<td>1.11m²</td>
</tr>
<tr>
<td>System-36/15 PLUS</td>
<td>16mm Pyrobel® Pyranova® 30 S2.0 Pyrogard® Insulation 30-15</td>
<td>1800mm</td>
<td>600mm</td>
<td>1.08m²</td>
</tr>
<tr>
<td>System-36/15 PLUS</td>
<td>Pyranova® 30 S3.0</td>
<td>1875mm</td>
<td>625mm</td>
<td>0.94m²</td>
</tr>
<tr>
<td>FF1</td>
<td>5mm Firelite® 6mm Pyran-S® 6mm Pyroshield® Safety 7mm Pyrostem® 7mm Pyrobelite® 7mm Pyrodur® Plus</td>
<td>875mm</td>
<td>750mm</td>
<td>0.66m²</td>
</tr>
<tr>
<td>FF1</td>
<td>7.2mm Pyrogard® C/W</td>
<td>1236mm</td>
<td>750mm</td>
<td>0.71m²</td>
</tr>
<tr>
<td>FF1</td>
<td>6mm Pyrotech™ 630</td>
<td>1750mm (at 450mm width)</td>
<td>560mm (at 1400mm height)</td>
<td>0.78m²</td>
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# Doors – 30 Minutes

<table>
<thead>
<tr>
<th>System</th>
<th>Glass Types</th>
<th>Max. Pane Height</th>
<th>Max. Pane Width</th>
<th>Max. Pane Area</th>
</tr>
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<tbody>
<tr>
<td>System-36/6 PLUS</td>
<td>6mm Pyrotuf®, 5mm Firelite®, 6mm Pyroshield®, 6mm Pyran-S®, 6mm Pyrocet®</td>
<td>1300mm</td>
<td>506mm</td>
<td>0.598m²</td>
</tr>
<tr>
<td>System-36/7 PLUS</td>
<td>Pyroguard® C/W 7mm, 7.5mm Pyrodur® Plus</td>
<td>875mm</td>
<td>750mm</td>
<td>0.66m²</td>
</tr>
<tr>
<td>System-36/7 PLUS</td>
<td>7mm Pyrostem®, 8mm Pyran-S®</td>
<td>1482mm</td>
<td>580mm</td>
<td>0.688m²</td>
</tr>
<tr>
<td>System-36/10 PLUS</td>
<td>Pyranova® S3.0.7</td>
<td>1353mm</td>
<td>870mm</td>
<td>0.95m²</td>
</tr>
<tr>
<td>System-36/10 PLUS</td>
<td>11mm Pyranova® 15 S2.0</td>
<td>1482mm</td>
<td>580mm</td>
<td>0.688m²</td>
</tr>
<tr>
<td>System-36/15 PLUS</td>
<td>Pyrostop®, 15mm Pyrostop®, 16mm Pyrobel®, Pyranova® 30 S2.0, Pyroguard® Insulation 30-15</td>
<td>1875mm</td>
<td>625mm</td>
<td>0.94m²</td>
</tr>
</tbody>
</table>

Note: When using System-36/6 PLUS and System-36/7 PLUS, the profiles shown here have been deemed acceptable by Exova Warringtonfire.

*Larger diameter apertures are the subject of current development. Please refer to our Technical Services team.*
**Doors 54mm**

<table>
<thead>
<tr>
<th>system</th>
<th>glass types</th>
<th>max. pane height</th>
<th>max. pane width</th>
<th>max. pane area</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF1™</td>
<td>Pyroguard® C/W 11.4mm</td>
<td>1400mm</td>
<td>460mm</td>
<td>0.575m²</td>
</tr>
<tr>
<td>RF1™</td>
<td>Pyroguard® Insulation 30-15</td>
<td>1440mm</td>
<td>540mm</td>
<td>0.65m²</td>
</tr>
<tr>
<td>RF1™</td>
<td>5mm Firelite®, 6mm Pyroshield® 2 6mm, 8mm, 10mm, 12mm Pyran-S® 7mm Pyrotem® 12mm Pyrobel® 13mm Pyrodur® 60-20 15mm Pyrostop® 30-10 16mm Pyrobel®</td>
<td>1488mm</td>
<td>620mm</td>
<td>0.75m²</td>
</tr>
<tr>
<td>RF1™</td>
<td>Pyranova® 15 - S2.0/S2.1 Pyranova® 30 – S3.0</td>
<td>1770mm</td>
<td>590mm</td>
<td>0.885m²</td>
</tr>
</tbody>
</table>

**Note:** For RF1™, an intumescent liner is required.

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**Doors 54mm**

<table>
<thead>
<tr>
<th>system</th>
<th>glass types</th>
<th>max. pane height</th>
<th>max. pane width</th>
<th>max. pane area</th>
</tr>
</thead>
<tbody>
<tr>
<td>System-36/15 PLUS</td>
<td>15mm Pyrostop®</td>
<td>1790mm</td>
<td>630mm</td>
<td>1.11m²</td>
</tr>
<tr>
<td>System-36/15 PLUS</td>
<td>Pyranova® 30 S3.0</td>
<td>1830mm</td>
<td>610mm</td>
<td>0.92m²</td>
</tr>
<tr>
<td>System-36/15 PLUS</td>
<td>16mm Pyrobel®</td>
<td>1800mm</td>
<td>600mm</td>
<td>1.08m²</td>
</tr>
<tr>
<td>System-90 PLUS</td>
<td>5mm Firelite®, 6mm Pyroshield® Safety 6mm Pyran-S®</td>
<td>720mm</td>
<td>720mm</td>
<td>0.43m²</td>
</tr>
<tr>
<td>System-90 PLUS</td>
<td>5mm Firelite®, 6mm Pyroshield® Safety 6mm Pyran-S®</td>
<td>1600mm</td>
<td>200mm</td>
<td>0.32m²</td>
</tr>
</tbody>
</table>

**Note:** For System-90 PLUS, an intumescent liner is required.
Doors – 60, 90 & 120 Minutes

Doors 54mm

<table>
<thead>
<tr>
<th>system</th>
<th>glass types</th>
<th>max. pane height</th>
<th>max. pane width</th>
<th>max. pane area</th>
</tr>
</thead>
</table>
| System-63Ø  | 5mm Firelite®  
6mm Pyroshield®  
6mm Pyran-S® | 462mm diameter max. |                 |                |
| System-36/15 PLUS | 15mm Pyrostop® | 1790mm           | 630mm           | 1.11m²         |
| System-36/15 PLUS | 16mm Pyrobelt® | 1800mm           | 600mm           | 1.08m²         |
| System-36/15 PLUS | Pyranova® 30 S3.0 | 1830mm           | 610mm           | 0.92m²         |

Note: For System-63Ø an intumescent liner is required. Circular finger-jointed beads are available from Haldane UK Ltd, tel: 01592 775656, fax: 01592 775757 or email: sales@haldaneuk.com

Doors 54mm

<table>
<thead>
<tr>
<th>system</th>
<th>glass types</th>
<th>max. pane height</th>
<th>max. pane width</th>
<th>max. pane area</th>
</tr>
</thead>
</table>
| System-90 PLUS | 5mm Firelite®  
6mm Pyran-S® | 500mm            | 400mm           | 0.2m²          |
| System-90 PLUS | 5mm Firelite®  
6mm Pyran-S® | 1600mm           | 200mm           | 0.32m²         |

Note: For System-90 PLUS, an intumescent liner is required. Only valid when used with door components made from suitable high density mineral composite material together with steel glazing beads. Contact our Technical Services team on 01626 834252 for more information. Note: We can provide stainless steel beads, or drawings for a fabricator.

Doors 44mm and 54mm

<table>
<thead>
<tr>
<th>system</th>
<th>glass types</th>
<th>max. pane height</th>
<th>max. pane width</th>
<th>max. pane area</th>
</tr>
</thead>
</table>
| System-90 PLUS | 5mm Firelite®  
6mm Pyran-S® | 500mm            | 400mm           | 0.2m²          |

Note: For System-90 PLUS, an intumescent liner is required. Only valid when used with door components made from suitable high density mineral composite material together with steel glazing beads. Contact our Technical Services team on 01626 834252 for more information. Note: We can provide stainless steel beads, or drawings for a fabricator.
**Screens or Partitions – 30 & 60 Minutes**

### Screens or Partitions

<table>
<thead>
<tr>
<th>System</th>
<th>Glass Types</th>
<th>Max. Pane Height</th>
<th>Max. Pane Width</th>
<th>Max. Pane Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>System-36/6 PLUS</td>
<td>Pyrocet® 5mm</td>
<td>1732mm</td>
<td>829mm</td>
<td>1.15m²</td>
</tr>
<tr>
<td>System-36/6 PLUS</td>
<td>Firelite® 6mm</td>
<td>2530mm</td>
<td>1019mm</td>
<td>2.34m²</td>
</tr>
<tr>
<td>System-36/7 PLUS</td>
<td>Pyroguard® C/W 7mm</td>
<td>2300mm</td>
<td>926mm</td>
<td>2.13m²</td>
</tr>
<tr>
<td>System-36/10 PLUS</td>
<td>Pyrodur® 10mm</td>
<td>2000mm</td>
<td>1378mm</td>
<td>1.90m²</td>
</tr>
<tr>
<td>System-36/15 PLUS</td>
<td>Pyrostop® 15mm</td>
<td>2000mm</td>
<td>1378mm</td>
<td>1.90m²</td>
</tr>
<tr>
<td>System-36/15 PLUS</td>
<td>Pyrobel® 16mm</td>
<td>2530mm</td>
<td>1019mm</td>
<td>2.34m²</td>
</tr>
<tr>
<td>System-36/7 PLUS</td>
<td>Pyrostem® 7mm</td>
<td>2530mm</td>
<td>1019mm</td>
<td>2.34m²</td>
</tr>
<tr>
<td>System-36/10 PLUS</td>
<td>Pyroguard® C/W 11mm</td>
<td>2300mm</td>
<td>926mm</td>
<td>2.13m²</td>
</tr>
<tr>
<td>System-36/10 PLUS</td>
<td>Pyroguard® C/W 11mm</td>
<td>2300mm</td>
<td>926mm</td>
<td>2.13m²</td>
</tr>
<tr>
<td>System-36/15 PLUS</td>
<td>Pyrostop® 15mm</td>
<td>2000mm</td>
<td>1378mm</td>
<td>1.90m²</td>
</tr>
<tr>
<td>System-36/15 PLUS</td>
<td>Pyrobel® 16mm</td>
<td>2530mm</td>
<td>1019mm</td>
<td>2.34m²</td>
</tr>
<tr>
<td>System-36/7 PLUS</td>
<td>Pyroshield® 8mm</td>
<td>2530mm</td>
<td>1019mm</td>
<td>2.34m²</td>
</tr>
<tr>
<td>System-36/7 PLUS</td>
<td>Pyra-S® 6mm</td>
<td>2875mm</td>
<td>1157mm</td>
<td>2.66m²</td>
</tr>
<tr>
<td>System-36/10 PLUS</td>
<td>Pyroguard® 10mm</td>
<td>2000mm</td>
<td>1378mm</td>
<td>1.90m²</td>
</tr>
<tr>
<td>System-36/10 PLUS</td>
<td>Pyroguard® C/W 11mm</td>
<td>2300mm</td>
<td>926mm</td>
<td>2.13m²</td>
</tr>
<tr>
<td>System-36/15 PLUS</td>
<td>Pyrostop® 15mm</td>
<td>2000mm</td>
<td>1378mm</td>
<td>1.90m²</td>
</tr>
<tr>
<td>System-36/15 PLUS</td>
<td>Pyrobel® 16mm</td>
<td>2530mm</td>
<td>1019mm</td>
<td>2.34m²</td>
</tr>
<tr>
<td>System-36/15 PLUS</td>
<td>Pyroshield® Safety</td>
<td>2000mm</td>
<td>1378mm</td>
<td>1.90m²</td>
</tr>
<tr>
<td>System-90 PLUS</td>
<td>Pyrostop® 15mm</td>
<td>2000mm</td>
<td>1378mm</td>
<td>1.90m²</td>
</tr>
<tr>
<td>System-90 PLUS</td>
<td>Pyrobel® 16mm</td>
<td>2530mm</td>
<td>1019mm</td>
<td>2.34m²</td>
</tr>
<tr>
<td>System-90 PLUS</td>
<td>Pyrostem® 7mm</td>
<td>2530mm</td>
<td>1019mm</td>
<td>2.34m²</td>
</tr>
<tr>
<td>System-90 PLUS</td>
<td>Pyrostem® 8mm</td>
<td>2530mm</td>
<td>1019mm</td>
<td>2.34m²</td>
</tr>
<tr>
<td>System-90 PLUS</td>
<td>Pyroshield® Safety</td>
<td>2000mm</td>
<td>1378mm</td>
<td>1.90m²</td>
</tr>
<tr>
<td>System-90 PLUS</td>
<td>Pyra-S® 6mm</td>
<td>2530mm</td>
<td>1019mm</td>
<td>2.34m²</td>
</tr>
<tr>
<td>System-90 PLUS</td>
<td>Pyra-S® 6mm</td>
<td>2530mm</td>
<td>1019mm</td>
<td>2.34m²</td>
</tr>
</tbody>
</table>

**Note:** Frame members to be of minimum cross-section 45mm x 70mm in either hardwood or softwood of not less than 520 kg/m³. Hardwood beads to be used for System-36/6 PLUS and System-36/7 PLUS (min density 640kg/m³). Hardwood or softwood beads to be used for System-36/10 PLUS and System-36/15 PLUS with a minimum density of 550kg/m³.

* Refer to Document N concerning impact requirements.

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System-36/6 PLUS with 6mm Pyran-S®

System-36/10 PLUS with 6mm Pyroshield®

System-90 PLUS with 6mm Pyroshield®

B25402 liner

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**Screens or Partitions – 60 Minutes**

<table>
<thead>
<tr>
<th>System</th>
<th>Glass Types</th>
<th>Max. Pane Height</th>
<th>Max. Pane Width</th>
<th>Max. Pane Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>System-36/15 PLUS</td>
<td>Pyrostop® 15mm</td>
<td>2000mm</td>
<td>1378mm</td>
<td>1.90m²</td>
</tr>
<tr>
<td>System-36/23 PLUS</td>
<td>Pyrostop® 23mm</td>
<td>2000mm</td>
<td>1342mm</td>
<td>1.80m²</td>
</tr>
<tr>
<td>System-90 PLUS</td>
<td>Pyroshield® Safety</td>
<td>1000mm</td>
<td>1000mm</td>
<td>1.00m²</td>
</tr>
<tr>
<td>System-90 PLUS</td>
<td>Firelite®</td>
<td>2420mm</td>
<td>1460mm</td>
<td>2.15m²</td>
</tr>
</tbody>
</table>

**Note:** Frame members to be of minimum cross-section 45mm x 90mm in hardwood (except Ash) of not less than 520 kg/m³ (for System-36/15 PLUS and System-36/23 PLUS) and 650 kg/m³ (for System-90 PLUS). For System-90 PLUS, an intumescent liner is required.

* Refer to Document N concerning impact requirements.
### Screens or Partitions – 60 Minutes

#### System

<table>
<thead>
<tr>
<th>Glass Types</th>
<th>Max. Pane Height</th>
<th>Max. Pane Width</th>
<th>Max. Pane Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF1®</td>
<td>5mm Firelite®</td>
<td>6mm Pyroshield® 2</td>
<td>6mm, 8mm, 10mm, 12mm Pyran-S®</td>
</tr>
<tr>
<td></td>
<td>500mm</td>
<td>1000mm</td>
<td>0.5m²</td>
</tr>
<tr>
<td>RF1®</td>
<td>5mm Firelite®</td>
<td>6mm Pyroshield® 2</td>
<td>6mm, 8mm, 10mm, 12mm Pyran-S®</td>
</tr>
<tr>
<td></td>
<td>1488mm</td>
<td>620mm</td>
<td>0.75m²</td>
</tr>
<tr>
<td>RF1®</td>
<td>Pyroguard® C/W 11.4mm</td>
<td>1400mm</td>
<td>460mm</td>
</tr>
<tr>
<td>RF1®</td>
<td>Pyranova® 15-S2.0/S2.1</td>
<td>1770mm</td>
<td>590mm</td>
</tr>
</tbody>
</table>

**Note:** Frame members to be of minimum cross-section 45mm x 94mm.
Framing and beading in hardwood (except Ash and Beech) of not less than 610 kg/m³.
* Refer to Document N concerning impact requirements.
Fitting Instructions

System 36 PLUS and System-63Ø
Fitting is completely clean and dry – no sealant, adhesive tape or wet adhesive is required. Corners are formed by simply notching the gasket with secateurs and stretching the elastomeric channel around the pane.

The beadings are pinned or screw fixed as required. Refer to pages 6 – 9. There is no need to apply an intumescent finish coating to the timber beads.

System-90 PLUS
The PVC channel with mitred corners is fitted to the glass. Any gaps must be filled with Lorient intumescent sealant. The beads are screw fixed or through-bolted as required. Refer to pages 6 – 9.

RF1™
Consists of a pair of bead applied intumescent glazing seals and a sodium silicate intumescent liner. To be used with appropriate hardwood beads (which Lorient can supply).

FF1
The FF1 gasket is supplied with strong self-adhesive tape attached. This is used to fix the gasket to the glazing beads. The beads should then be cut to length, mitred, and pinned or screw-fixed into place as required. The product should be fixed to the beads on both sides of the glazed aperture.

Guarantee of Origin

It’s important to always use a product that can be clearly identified. All our glazing systems carry identification (where possible).
Technical References

Lorient is quality assured under the disciplines of BS EN ISO 9001:2008. Accreditation to this standard is a guarantee that we conduct our business to the complete satisfaction of our customers with regard to design solutions, manufacturing consistency and management procedures.

In addition, this internationally recognised standard for quality management generates customer confidence and eliminates the risk of poor performance. Regular audits of our company procedures are undertaken by qualified BSI staff to ensure ongoing compliance with all aspects of the standard.

Lorient has attained BS EN ISO 14001:2004 accreditation for environmental management, making us the first seal manufacturer to have achieved this important award. This internationally recognised standard represents that we have demonstrated our commitment to responsible environmental behaviour, including prevention of pollution, control and reduction of waste, and ongoing monitoring and improvement of our environmental performance. Achieving ISO 14001 is just one part our ongoing commitment to operate in a sustainable way.

Handling and Storage

No special precautions are required when handling our fire resistant glazing systems, but they should always be treated with care. Our products should be stored flat in a clean, dry, dust-free area away from heat and at a storage temperature of between 5°C and 40°C. Safety data sheets are available on request. The product does not fall within the scope of COSHH Regulations.

Maintenance

It’s recommended that all fire resistant glazing be inspected and cleaned once a month. The retaining channel or gasket should be cleaned with a damp cloth. Any cracked glass should be immediately replaced with a matching pane. The Lorient retention system will normally be re-useable.
additional information

Trade Associations
Lorient is proud to be a member of the following associations.

Intellectual Property
© 2014 Lorient Polyproducts Ltd – this brochure is protected by copyright and neither the drawings nor text may be reproduced or transmitted in any form without prior consent from Lorient. Lorient products described in this brochure are protected by patents and design registrations in Great Britain and other countries.
We are committed to continually enhancing and improving our product range. We reserve the right to change product specifications from time to time without prior notice. E&OE.
Performance Door Design: The Basics of Sound Reduction

Effective acoustic containment helps to improve the quality of the built environment, preserving privacy as well as excluding unwanted noise. With changing regulations, it’s essential to be up to date with the relevant requirements and the implications for door assemblies.

Our acoustic CPD seminar covers:
- the nature of sound, examining airborne transmission of sound;
- regulatory requirements and British Standards that relate to acoustic performance;
- test procedures and interpretation of test reports;
- effective design of door assemblies for acoustic performance, including door construction and the influence of sealing systems;
- design conflicts between acoustic performance, durability and ease of operation of the door;
- independent accreditation.

The Role and Performance of Fire and Smoke Resisting Door Assemblies

The importance of fire and smoke resisting door assemblies is illustrated by the 388 annual deaths in fire tragedies in the UK alone. Apart from the human toll, property losses each year approach £2.52 billion.

Our fire and smoke containment seminar covers:
- hard facts concerning deaths, injuries and property damage caused by fire and smoke;
- regulatory requirements for fire and smoke resisting door assemblies;
- the nature and behaviour of smoke;
- effective design of door assemblies for smoke containment, including the threshold gap;
- design conflicts between fire containment, smoke containment, durability and ease of operation of the door;
- independent accreditation.

The Regulatory Reform (Fire Safety) Order 2005 and its implications for fire doors

The RRO consolidated 70 pieces of legislation; shifted responsibility for fire safety management; abolished the Fire Safety Certificate; established the Fire Risk Assessment and created major change in legal liability.

Our RRO CPD seminar covers:
- an overview of the RRO;
- product solutions;
- the dangers of fire and smoke;
- the importance of fire doors – including installation and maintenance.

Our CPD materials have been independently verified and certified by the RIBA as CPD approved. A certificate for 1 hour’s CPD will be provided, which contributes to Continuing Professional Development requirements.

If you’re interested in booking either seminar, please contact our Marketing department or e-mail cpd@lorientuk.com.
We continue to lead the way in research and development: As a company we have 35 years’ experience, so our experts are well equipped to listen, help and advise you on your acoustic, smoke and fire containment needs.

Technical Services
We’re happy to provide specialist advice on acoustic, smoke and fire protection for refurbishment and new build projects. If you need assistance, you can call our Technical Services team.

Alternatively, we can arrange a site visit to get a clearer idea of your needs and how we can help you. We also provide copies of test reports and samples where needed and can give guidance on how best to meet Building Regulations and Standards.

Customisation
If you have a particular requirement which isn’t covered by the applications in this brochure, we may be able to supply an existing non-standard item, or even develop a customised solution for you.

Web Support
We have a comprehensive, user-friendly website which features our extensive range of products, CAD drawings and details on the services we offer. Our entire collection of brochures can be downloaded, as can copies of certification and specification texts.

Call our Technical Services team on 01626 834252
www.lorientuk.com
For further information about Lorient products please visit our website
www.lorientgroup.com
or follow us at:

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