

Fire Resisting Rolling Shutters & Doors



System Doors
www.systemdoors.com

Fire Resisting Rolling Shutters

What is a fire resisting rolling shutter?

A traditional single skin fire resisting rolling shutter looks and operates in a similar way to a standard steel rolling shutter. The physical differences are that the materials used are heavier and there are more fixings required. Syston Doors can also provide alternative physical fire shutter products as shown in this brochure.

Fire Shutter Structural Recommendations

The structure supporting the rolling shutter must be a fire resistant separating element (to BS476, Part 20, 21, 22, 1987), having a fire resistance equal or greater than that required of the rolling shutter itself and must be capable of supporting the rolling shutter for the required fire resistance period without compromising the fire performance of the rolling shutter. Consideration must be given to the loads imposed by the various rolling shutter components, i.e. end plates and the barrel support brackets.

Fixing to Masonry Openings.

Opening to be constructed from masonry, reinforced concrete or dense concrete blocks (7 Nm and above) and have a fire resistance equal or greater to that of the door.

Lightweight and hollow blocks are NOT suitable.

All concrete/masonry elements must be designed in accordance with BS5628: Part 3:1985 and have a density of $> 600\text{kg/m}^3$. Lintels spanning the structural opening should comply with BS8810: Part 1:1997.

Client to ensure that openings are plumb and square and that the structure will accept rawlbolt type fixings without cracking.

Subject to the fire shutter being fitted to a flat surface, gaps of up to 6mm are acceptable (for a distance of 150mm), but if, due to an uneven structural finish, larger gaps are apparent, they must be sealed with a suitable fire retardant material, e.g. plaster, fire retardant mastic seal (non-intumescent). Syston Doors do not include this sealing.

Fixing to Steel Openings

Where fire resisting rolling shutters are fitted to steel, the steel must be insulated and thermal bridging effects considered where insulation has been breached.

It is recommended that a critical steel temperature of 400°C and steel sections with an H_p/A below 230m^{-1} are used for designing fire resisting steel supporting structures.

Fixing to Timber Partitions

Fire resisting rolling shutters can be fixed to non-loadbearing timber framed or steel framed partitions (with suitable timber inserts all round) up to 2750mm wide x 3250mm high, (maximum area 10m^2), for up to 60 minutes under cover of BRE test certificate FG 7941 N. The opening must be capable of carrying the weight of the shutter and be equal or greater than the fire resistance of the rolling shutter assembly.

It is most important that the Contractor adheres to the opening construction details, as these are also covered by the assessment and as such become the CONTRACTOR'S RESPONSIBILITY.

Fire testing

We do not as standard include for a return journey involving a fire test after the original installation. We can include this at extra cost.

Maintenance

Please note that it is a requirement under Regulatory Reform (Fire Safety) Order 2005, that fire resisting Rolling Shutters are tested every six months. Full width access should therefore be maintained to the shutter to enable this to be carried out. Syston Doors can offer routine testing and maintenance contracts on application. If no contract is entered into we cannot take any responsibility for the working condition of the shutters after the guarantee period.

Fire Shutters over fire exits and escape routes

Appendix B of the Buildings Regulations Approved Document B states that roller shutters across a means of escape should only be released by a heat sensor, such as a fusible link or electric heat detector, in the immediate vicinity of the door. Closure of shutters in such locations should not be initiated by smoke detectors or a fire alarm system, unless the shutter is also intended to partially descend to form part of a boundary to a smoke reservoir.

Note

Removable guides, bottom rubber seals, brush seals, safety edges and wicket gates cannot be fitted to fire shutters.



Shutter shown with
optional key lock

50mm laths

76mm laths

‘Flame Shield 120’ Tubular Motor Operated Fire Shutter

Application

‘Flameshield 120’ 240v single phase tubular motor operated fire shutters provide an attractive and space friendly fire shutter solution with a fire resistance as standard of up to 120 minutes (2 hours) and for openings up to 4800mm wide x 1900mm high (see size grid).

The shutter is constructed to Warrington Fire Research Centre WARRES No. 145904, the test is in accordance with clause 8 of BS476 Part 22.

The attractive 50mm flat faced lath for openings up to 3500mm wide x 2500mm high, make it most suitable for servery type openings or where aesthetic appearance is important.

Over this size a traditional 76mm curved lath is used, but still offers the benefits of a space friendly coil casing and guide detail.

General Specification

Curtain

Shutter curtains are constructed from 50mm flat faced laths up to 3500mm wide x 2500mm high or 76mm traditional curved laths over this size, with a standard Tee bottom rail. (If smaller openings are adjacent to larger openings the laths on the smaller openings would normally be 76mm to ensure all match).

Hood (Coil Casing)

A profiled galvanised sheet steel hood is included as standard. A fascia can be included at extra cost on fit within applications.

Dependent on the fire rating of the shutter and the size of the opening, the shutter could require a hood support bracket.

Guides

Vertical guides are fabricated from 50mm deep galvanised steel channels. Wider openings will use 65mm deep channels.

Finish

Standard finish is, curtain, bottom rail, guides & hood galvanised, end plates and fixing angles are finished in one coat of primer paint.

Powder coated finish to a standard range of BS/RAL colours available at extra cost.

Locking

A lock is not normally included. A centre bottom rail key lock which sends a bolt into each side guide can be included at extra cost.

Operation

Powered by a single phase 240v tubular motor with normal day to day operation of the shutter by rocker switch.

Manual override by hand crank can be included at extra cost.

Available Modes of Activation

Fusible Link release

On activation of the fusible link from a local heat source of 68°C, this will send a signal to the relay which will signal the shutter to power down from the maintained supply or alternatively from the optional battery back up unit.

Fire Alarm link

By use of a fire alarm relay the shutter will close under power. The unit will require a maintained supply or alternatively we can supply with a Battery Back Up unit.

Volt free fire alarm signal required.

Syston Doors do not include for connecting into the fire alarm system.

Audio Visual Warning Closure

For use when an audio & visual warning is required of the shutter closing. The unit also includes a facility for a delayed closing of the shutter. The fire alarm signal is connected directly into this unit. On activation from the fire alarm the unit starts to flash & sound with the shutter closing after a pre-determined delay (10 - 240 seconds).

Fixing to Partitions

Flameshield 120 can be fixed to non-loadbearing timber framed or steel framed partitions (with suitable timber inserts all round) up to 2750mm wide x 3250mm high (maximum area 10m²) up to 60 minutes under cover of the above certification.

For larger openings see our 'Flame Shield 240' range of fire shutters.

Sizes available for Flame Shield 120

Clear Width

	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	3800	4000	4200	4400	4600	4800
Clear Height	700																				
900																					
1100																					
1300																					
1500																					
1700																					
1900																					
2100																					
2300																					
2500																					
2700																					
2900																					
3100																					
3300																					
3500																					
3700																					
3900																					
4100																					



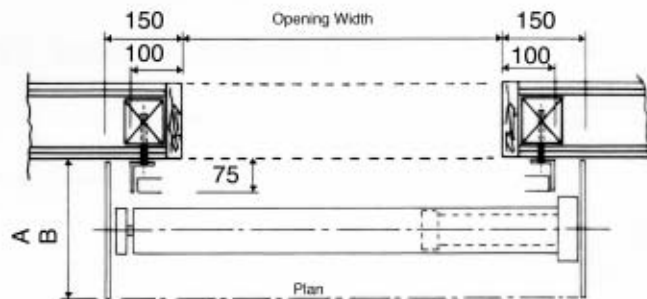
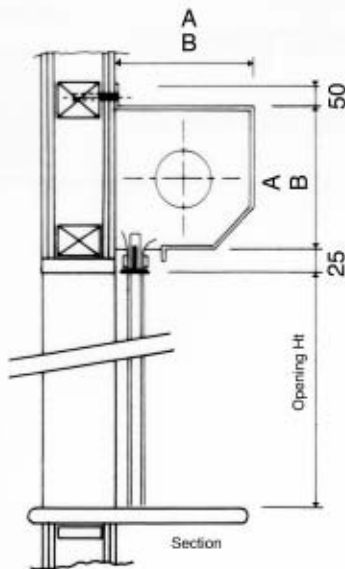
Technical Information

Flame Shield 120

Door Weight

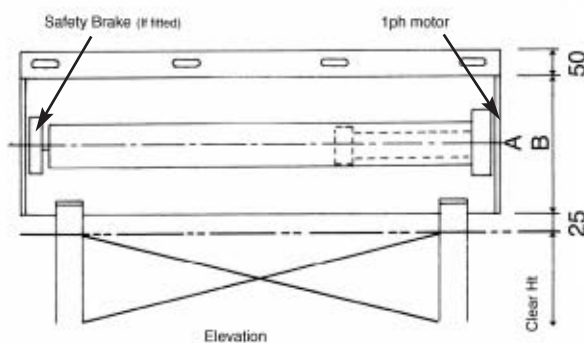
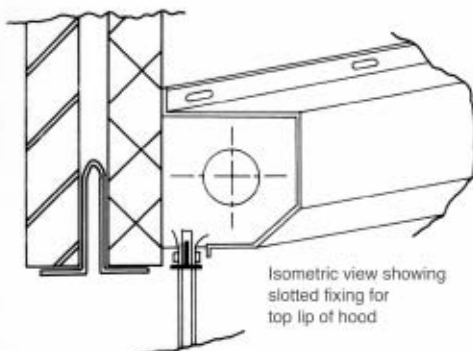
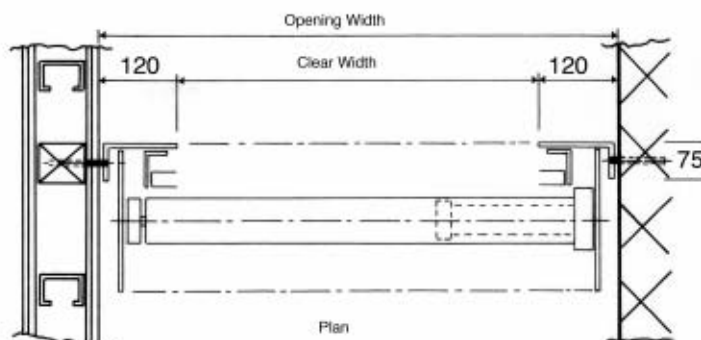
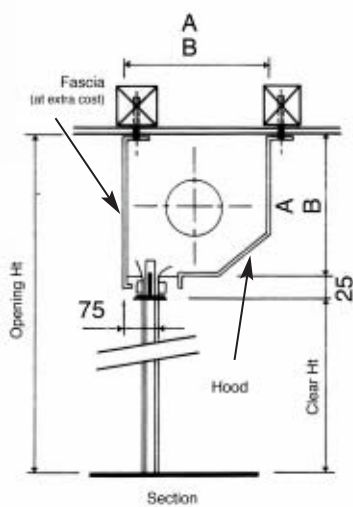
Typically 30 kg/m².

Face Fitted



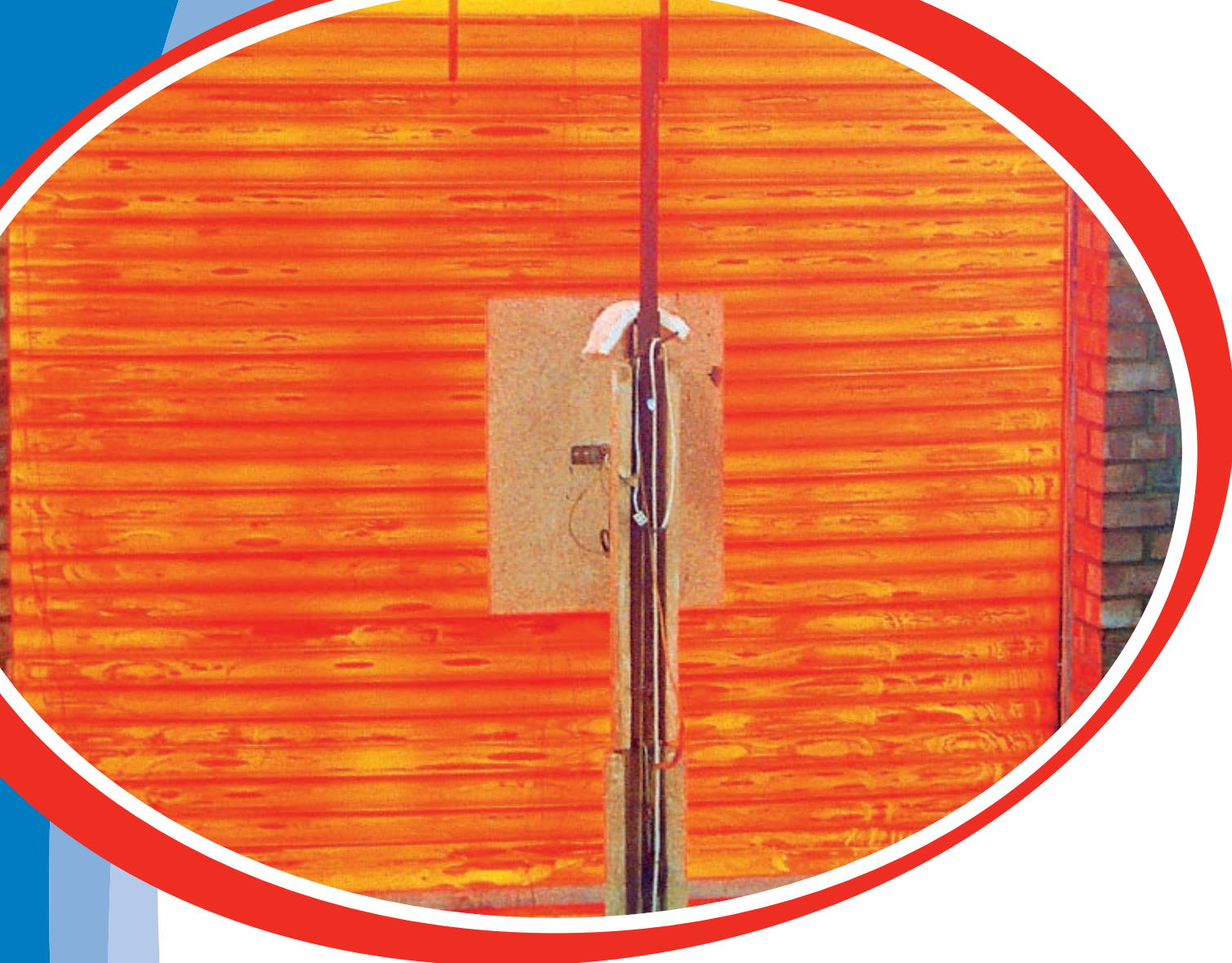
A = Up to 2570mm opening height (2900mm overall) = 305mm sq.
 B = 2571mm to 3475mm opening height (2946mm - 3850mm overall) = 350mm sq.
 NOTE: For openings over 3500mm wide add 15mm to all sideroom dimensions shown

Fit Within



Minimum width available is 800mm overall end plates.

Full width access to be maintained for future service and maintenance.



'Flame Shield 240' Electrically Operated Fire Shutter

Application

Designed for use where the tube motor operated fire shutter is not suitable and providing 30, 60, 120 or 240 minutes of protection from fire this shutter has been tested to BS476 Part 22.

Flame Shield 240 provides fire protection for all uses including department stores, shopping centres, warehouses, factories, schools and all other areas where protection from the spread of fire is required.

Fixing to Partitions

Flame Shield 240 can be fixed to non-load bearing timber or steel framed partitions (with suitable timber inserts all round) up to 2750mm wide x 3250mm high (Maximum area 10m²) up to 60 minutes.

General Specification

Curtain

Shutter curtains are constructed from 76mm curved section steel laths, which are securely held in place by end locks. Lath thickness' vary dependant on opening size and fire rating. Bottom rails are roll formed galvanised Tee sections.

Hood (Coil Casing)

All fire shutters as standard include a galvanised sheet steel hood (coil casing).

A motor cover will be included on all shutters under 2500mm high and optionally over this height.

Guides

65mm x 3mm (minimum) mild steel channels mounted on rolled steel angles.

Endplates

Mild steel of appropriate thickness relative to door size.

Type of Operation

Hand Chain

Available up to 4000mm wide x 4000mm and suitable for applications where the shutter is held open, closing only in the event of a fire. Manual closing is achieved by releasing a pull cord, which allows a controlled descent via a gear unit at approximately 100mm/second.

Operating by the hand chain is a slow process and power operation is recommended when everyday use is required.

Electric

Suitable for all sizes of shutter, the motor is either single phase (240 Volt 50 Hz) or 3 phase (415 Volt 50 Hz) dependant on size of door.

A controlled descent of 100mm per second (approx.) is an inbuilt safety feature.

In the event of power failure, manual override is achieved by pulling a pull cord to close the shutter under controlled descent and a hand chain to open.

The handchain override is designed for emergency use only.

As standard each shutter will include an open/stop/close push button station mounted on the motor side at approximately 1500mm above the finished floor allowing sight of the shutter during normal operation.

Other control options available are shown under 'Options'.

All switchgear unless otherwise stated are surface mounted.

Modes of Activation

Option 1

Self closing by means of a thermal fusible link activated at a temperature of 68°C and mounted to the underside of the hood

Option2

*24v DC auto resetting solenoid release device connected to the fire alarm/smoke detector.

Solenoid automatically resets when the shutter is fully opened by pressing the 'up' button and when the alarm has been turned off.

(On hand chain operated shutters the solenoid is reset manually by pulling on a cable).

Syston Doors do NOT include for connecting into the fire alarm.

The fire alarm circuit must provide the supply for the solenoid (0.5 amps) with an initial supply of 3.5 amps for 20 – 30 m/seconds to release the shutter but only when in the alarm condition. (If the fire alarm circuit is unable to provide a 24v DC supply for the solenoid or ancillaries a battery back-up system can be provided at extra cost).

Note! To comply with current legislation fire shutters cannot be linked to fire alarm systems if they are over fire exits or cover a fire exit route. They can only be fitted with a device, which will close the shutter, by a local heat source i.e. fusible link.



Option 3

All as Option 2 but with mechanical fusible link back up.

Size Parameters

Chain operated 4000 x 4000mm

Power operated 7000 x 7000mm

Larger sizes available on application.

Finish

All components other than curtain, bottom rail & hood finished primed. Curtain, bottom rail & hood (& motor cover if fitted) are galvanised.

Powder coated finish to BS/RAL colours available at extra cost.

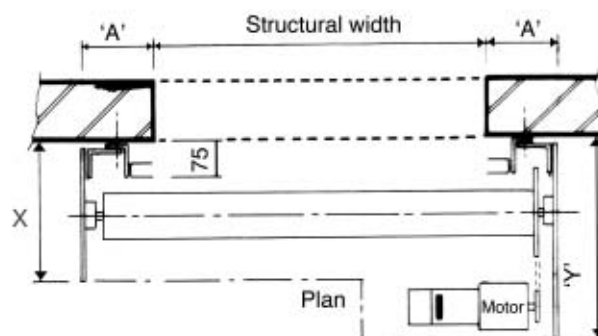
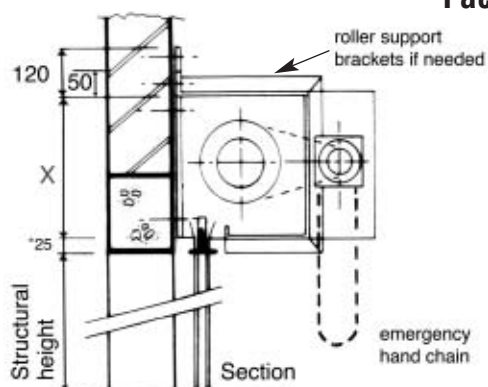
Options

- 'Shutter Closing' audio-visual warning panel with in-built time delay to one or both sides of shutter.
- Battery back up for solenoid release device.
- Fuse link back up for shutter fitted with solenoid release device.
- Key switch control.
- Galvanised sheet steel fascia.
- Motor cover (usually included if under 2500mm high).
- Part close facility using audio visual warning panel. (Shutter to act as smoke curtain with full closure after pre-set delay. Shutter MUST have a maintained power supply to accommodate this function).



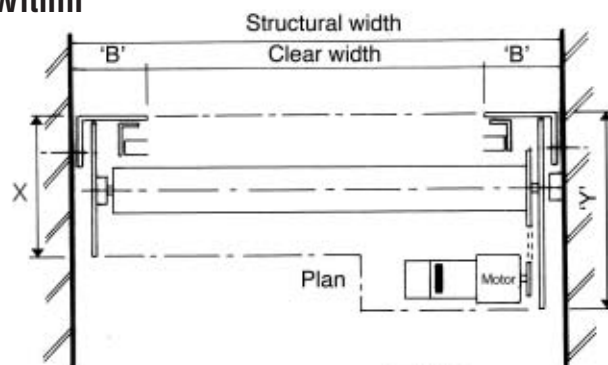
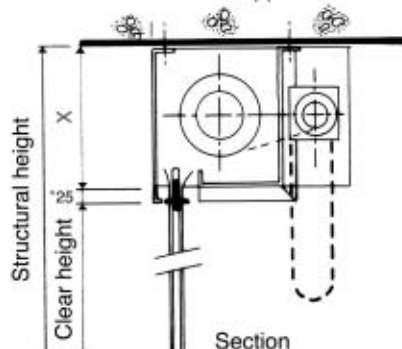
Flame Shield audio visual warning panel

Face Fitted



*100mm if roller support fitted

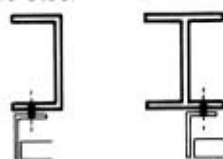
Fit Within



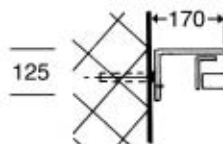
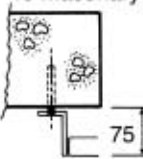
*100mm if roller support fitted

Minimum fixing face if fitted to steel is 75mm

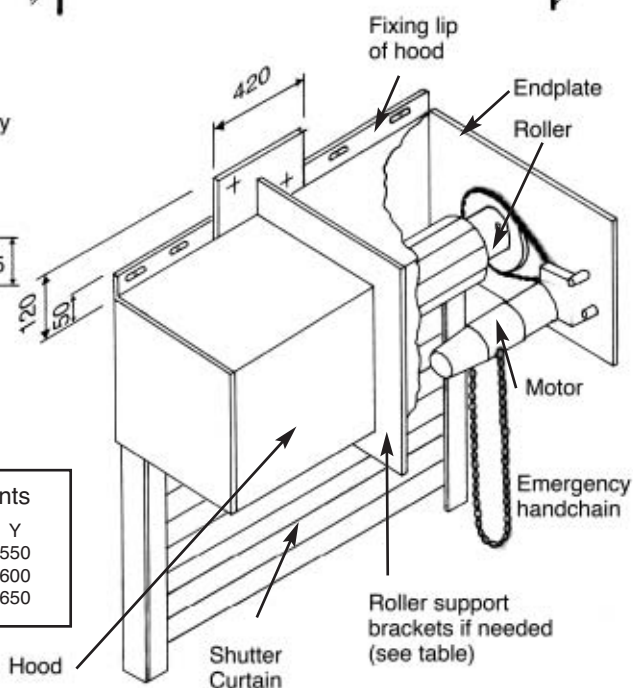
Face Fitted To Steel



Face Fitted To Masonry



Fit Within To Masonry



Sideroom requirements

	A	B
3000 x 3000	153	170
5000 x 5000	153	170
7000 x 7000	153	170

Headroom requirements

	X	Y
3000 x 3000	350	550
5000 x 5000	400	600
7000 x 7000	450	650

Full width access to be maintained for future service and maintenance.

Minimum width available is 800mm overall end plates.

Roller Support Bracket

Arrangement	Maximum size (mm) W x H	1 Hour	2 Hour	4 Hour
Hand Chain/Electric	4000 x 2500			
Electric	3000 x 5000			
Electric	4000 x 2500		1	1
Electric	5000 x 5000		1	1
Electric	6000 x 5000		1	2
Electric	6000 x 6000	1	1	2
Electric	7000 x 7000	1	2	3

Door Weight

Varies with opening size dependant on lath/barrel/casing requirements but typically 45 kg/m² approximately.



Self-Coiling Fire Shutter

Application

Designed for smaller openings the Syston Doors self-coiling fire rolling shutter has been tested by the Loss Prevention Council (Report No.TE6697) and assessed by the BRE, Certificate CC10571, and can be face fixed or fitted within the opening.

Operating via a counterbalanced sprung roller, the shutter will close automatically by fusible link at 68°C closing by means of a weight bar under gravity.

We can also offer an automatic release system (solenoid) to allow the shutter to close on an alarm signal. The fire alarm must provide the supply for the solenoid (90m/amps).

Syston Doors do not include for connecting into the fire alarm.

*Maximum size: 1800mm clear width x 2100mm clear height.

General Specification

Curtain

- Shutter curtains are constructed from 50mm flat faced laths with a standard Tee bottom rail.

Hood (Coil Casing)

- A galvanised sheet steel hood is included as standard. A fascia can be included if required at extra cost.

Guides

- Vertical guides are fabricated from 50mm deep galvanised steel channels.

Locking

- Standard locking is by bottom rail mounted shootbolts. Cylinder key operated locks are available at extra cost.

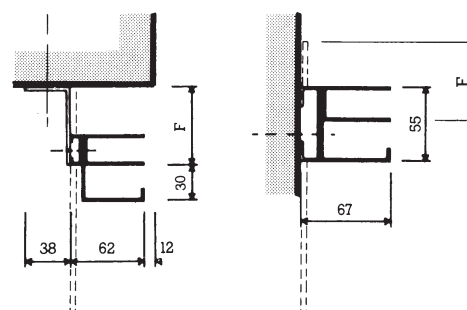
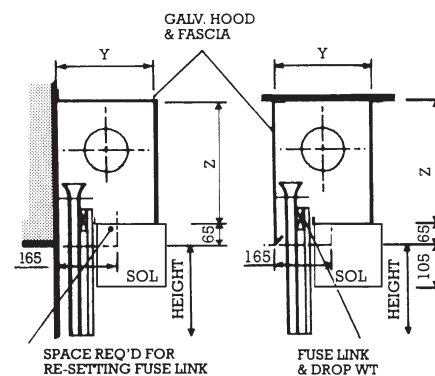
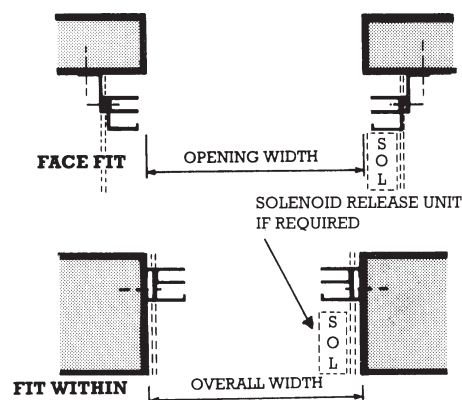
Finish

- Standard finish is, curtain, bottom rail, guides & hood/fascia galvanised.
- Powder coated finish to a standard range of BS/RAL colours available at extra cost

*N.B. The maximum clear opening height available with a push up fire rolling shutter is 2100mm. Above this size an electrically operated shutter must be used. Manual shutters can be used for normal security but will be heavier to lift than non fire rated shutters. This should be considered if doors are used regularly. For controlled descent and ease of use we recommend electrically operated fire shutters.

Technical Information

Further technical information is given on our website...



HEIGHT	Y	Z	F
0 - 1200	230	290	50
1201 - 2000	254	314	65
2001 - 2100	280	340	65
ALL DIMENSIONS IN MILLIMETRES			
WEIGHT 30kg/m²			



'Fireflex R' Radiant Heat Reducing Fire Resisting Rolling Shutter

Application

Tested by the Loss Prevention Council (Test Report 220737) to an integrity of 240 minutes (4 hours) for openings up to 50 m²

Fireflex is an obvious choice where increased risk of fire is a major concern. Fireflex provides a substantial safety barrier between the source of the fire and any precious or dangerously flammable stock. Fireflex is the perfect application for hospitals, shopping centres and industry.

Designed for internal or external applications where increased fire protection is required. It provides radiant heat protection with reliable operation through a simple control panel that can be adapted for a range of activation methods.

Fireflex is power operated with controlled descent following automatic activation. A safety brake is included as standard at the non motor end.

Due to its unique construction, the radiant heat levels around Fireflex drop from 65kw m² to 2.7 kw m². This means that combustible materials can be stored 500mm away from a 1200°C inferno, increasing floor space and reducing risk and break down of fire compartmentation.

Fireflex R also has a weighted sound reduction of 18 dB (BS5821 Part 3: 1984).

General Specification

Curtain

Manufactured from pre galvanised material designed to provide a hollow section panel with ceramic infill. Each section is 100mm high with twin ribbed face for rigidity.

The curtain is held in position with purposely designed end fittings which act as a curtain alignment system. The bottom panel is terminated with a galvanised steel plate with horizontal and vertical slots.

Hood (Coil Casing)

All Fireflex R shutters include a galvanised sheet hood as standard with optional motor cover. (Motor cover always included if less than 2500mm high).

Guides

Formed from pre galvanised steel.

Endplates

Mild steel of appropriate thickness relative to door size.

Finish

Standard finish to all parts is galvanised.

Powder coated finish to a standard range of BS/RAL colours available at extra cost

Operation

Fireflex Shutters are power operated by a 3 phase & neutral motor with various options of release:

Level 1 Fusible Link Operation

Normal operation by push button station or keyswitch with fuse link to close shutter at local heat source of 75°C.

*Level 2 Alarm activation with manual reset

Normal operation by push button station or keyswitch with solenoid release to close shutter following fire alarm signal with manual reset of solenoid by pull cables.

*Level 3 Alarm activation with automatic reset

Normal operation by push button station or keyswitch with solenoid release to close shutter following fire alarm signal with automatic reset of solenoid once alarm is switched off by fully opening shutter.

*Level 4 Alarm activation with automatic reset and part close facility

Normal operation by push button station or keyswitch with solenoid release to close shutter following fire alarm signal with automatic reset of solenoid once alarm is switched off by fully opening shutter.

Shutter can also part close to act as a smoke curtain, fully closing after an adjustable delay. Shutter must have maintained supply for this function.

**For Level 2, 3 and 4 Audible Visual (with adjustable delay timer) can be included to one or both sides of the opening.*

Fire Alarm requirements

The Fire Alarm circuit must provide the supply for the 24v DC solenoid (0.5 amps) with an initial supply of 3.5 amps for 20-30 m/seconds to release the shutter but only when in the alarm condition.

If the fire alarm is unable to provide a 24v DC supply a battery back up system is available at extra cost.

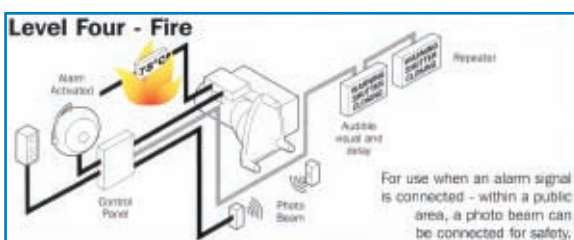
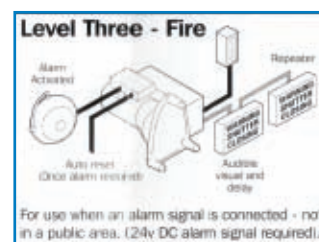
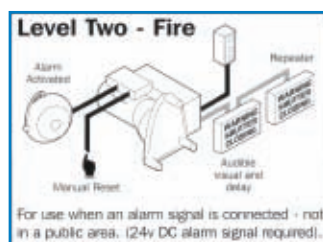
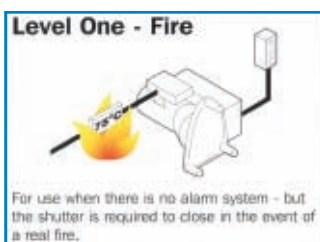
The 24v DC supply needs to be provided separately from that of the fire alarm system as under the requirements of BS5839 Clause 19, the connection of such equipment is specifically prohibited.

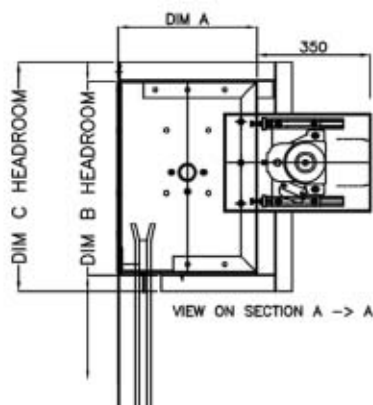
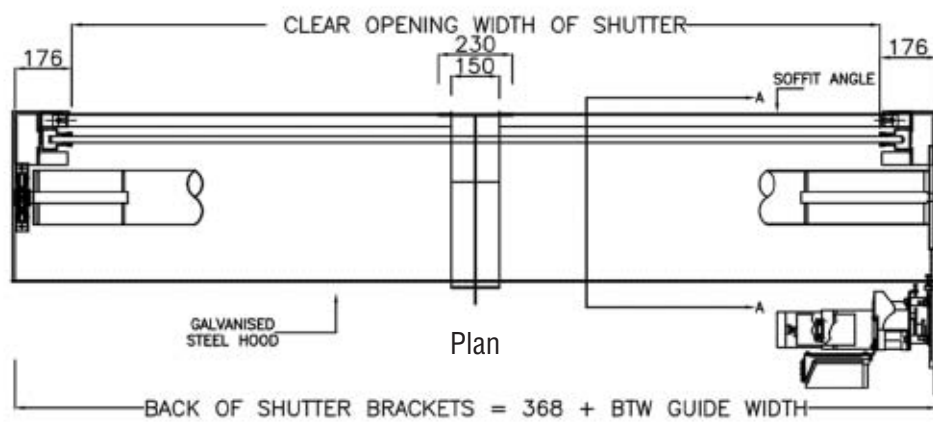
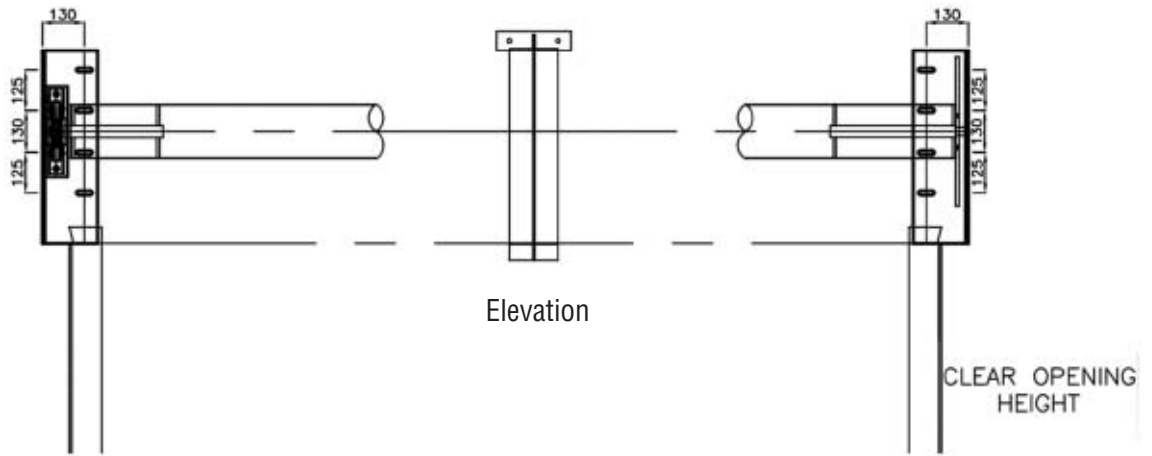
Syston Doors DO NOT include for connecting into the fire alarm circuit.

Note! To comply with current legislation fire shutters cannot be linked to fire alarm systems if they are over fire exits or are on a fire exit route. They can only be fitted with a device, which will close the shutter, by a local heat source i.e. fusible link.

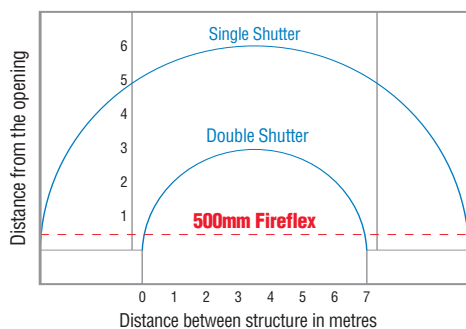


Fireflex audio visual warning device

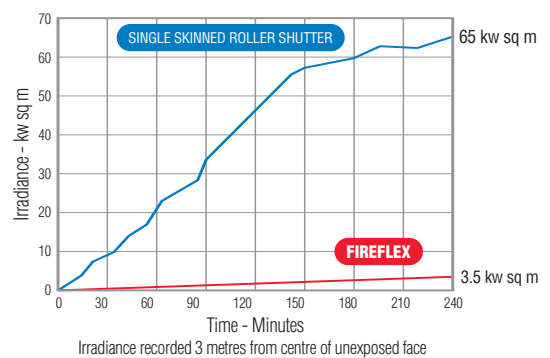




Width	Height	A	B	With hood support over 3000mm wide	C
2500	2500	430	525		635
3000	3000	500	705		715
4000	4000	500	705		715
5000	5000	550	755		865
6000	6000	600	805		915
7000	7000	650	855		915



Radaint heat profile showing the safe distance storage of combustible materials for a 7m x 7m opening.



Syston Doors is a leading manufacturer and supplier of industrial doors, rolling shutters and associated products and has developed a comprehensive range to meet the requirements of the specifier, designer and end user.

Established since 1920 and with a wealth of experience, Syston Doors is based in Syston, near Leicester at the heart of the motorway network, offering nationwide service.

Our range includes:

- Rolling Shutters & Grilles in Steel, Aluminium and Timber
- Fire Resisting Rolling Shutters
- Rapid Action Doors
- Steel Doorsets
- Folding Shutter Doors
- Dock Shelters, Seals & Dock Levellers
- Insulated Rolling Shutters
- Insulated Sectional Doors
- Transparent Rolling Door Systems
- Sliding Folding Closures
- PVC Strip Curtains & Rubber Crash Doors
- Collapsible Grilles for Windows & Doorways
- Window Rolling Shutters
- Moveable Walls & Concertina Screens
- Domestic Garage Doors & Rolling Shutters
- Retractable Awnings & Shading Systems

Nationwide Repair & Service to all makes & types of Industrial Door

Syston Doors

SYSTON ROLLING SHUTTERS LTD TRADING AS SYSTON DOORS

Albert Street, Syston, Leicester LE7 2JB, U.K.
Telephone: (0116) 260 8841 Fax: (0116) 264 0846
email: sales@syston.com
or visit www.syston.com

