



### Introduction:

Fire rated roller shutters manufactured by Hart from 30 minutes up to 4 hours fire resistance and tested to BSEN 1634-1.

### Approval:

At the 31st of October 2019 a new standard came into force, BS EN 16034 specifically for fire doors. Up until that date fire doors did not have to be CE marked and did not have to conform to EN 12453 Industrial, commercial and garaged doors and gates, safety in use of power operated doors. NOW THEY DO.

**Subsequent to the 31st October 2019 all fire doors must be tested to BS EN 1634 (not the BS 476 part 22) and be CE marked.**

Building regulations require the use of certified products for resistance of fire. The Loss Prevention Council (LPC) is a key approving authority for fire resisting products. They have tested, assessed and approved HART DOOR SYSTEMS fire roller shutters. They also monitor the ISO 9001:2015 quality system that we operate to ensure standards are maintained during production and installation.

### System Design Supporting Structure:

A) Structural steel section factor,  $A/V$ , must be less than  $230m^{-1}$ . Section factor to be calculated assuming section is exposed to fire on all four sides. The section factor shall be calculated as described in EN 13381-4 and EN 13381-8. This rule applies to both the vertical and horizontal steel sections of the support frame.

B) Fire protection system must have been shown by test to EN 13381 to maintain the steel temperature at 400°C or less to retain strength and minimise the effects of expansion in the steel section.

### Operation in normal condition:

Press button for normal operation or key switch operation for security purposes and prevention of unauthorised use.

For safety reasons, the location of the push button or key switch must be positioned in an area where the operator will have full view of the entire door. During operation, 'Constant pressure must be maintained on the button by the operator' until the door is fully closed. Additional safety must be provided for pedestrians if this is not the case.

### Automatic activation in fire condition:

Least cost option is that the door be activated by a sacrificial fusible link. This will activate the door independently when the heat around the link reaches approximately 72°C. It will not be triggered by smoke & will require replacement before the door can operate normally again. Need to be supported by risk assessment to ensure compliance to BSEN 12453

Alternatively a fire roller shutter will be part of an overall fire (and smoke) control system. The fire roller shutter motor comes complete with a 24V dc energised to hold actuator. When the actuator is de-energised it will release the drive brake and the door will close by controlled descent in a safe and controlled manner (fail-safe). As an option the door will be supplied with a fire control panel which allows a volt-free signal to be used to allow closure. The fire control panel also has the ability to hold open the shutter during power failure for up to 60 minutes via internal batteries and comes with audio/visual warnings.

During installation and commissioning the actuator must be energised to prevent the motor turning and the door closing. The fire shutter is reset by re-energising the actuator and giving an open command.

A combined fusible-link and actuator option is also available including upgraded sophistication to suit client needs.

### Pedestrian safety:

In the situation where a doorway could or is used by pedestrians and the fire shutter is required to have safety systems to BSEN 12453. A minimum of AV warning potentially supported by light curtain or multiple photocells all controlled through a battery backed up control panel is our recommendation. Should a pedestrian be in the line of the door when the fire shutter closes, then the door will stop and only continue when obstruction is clear. The door will then continue to close unless the beam is interrupted again when the same procedure operates.

Note: Safety edge devices are not permitted due to the flammable rubber content. Other presence sensing devices should be used to protect the pedestrian area.

Safety brakes are fitted to all fire roller shutters to prevent uncontrolled closure in the event of mechanical failure.

### Casing support brackets:

Required for 60 minute and over fire resistance (not 30 minute) These heavy brackets designed to support the casing and roller in a fire situation are to be fitted dependant on the size and fire rating required.

### Counter tops:

If required for shutter to close onto should be of Class 0 fire resistance.

### Hazard Analysis:

When the roller shutter is fully closed the elevated temperatures exhibited by the unexposed face of the shutter is sufficient to cause fire spread by radiant heat transfer. Sufficient distance is required for storing combustible materials from the face of the roller shutter as recommended in the 'LPC Design Guide of the Fire Protection of Buildings'. For example, combustible materials would require a safe distance of 3m from a 10m<sup>2</sup> fire roller shutter.

### Finish:

Galvanised steel, powder coated or plastisol finishes available.

### Service and maintenance and testing:

Fire roller shutters must be regularly tested to ensure that they operate i.e. close on activation by the fire control system. Power operated doors must be maintained to manufacturer's requirements to comply with the machinery safety in use legislation and with the HSE recommendations.

### Duty cycle:

Limited duty cycle is provided only providing one operation per hour dependant on size of shutter and motor. If more operations are required then please state this with your enquiry.



Speedor Super



Speedor Mini



Speedor Storm



Speedor Combi



Roller Shutters Fire and/or Security



Automatic Conveyor Door



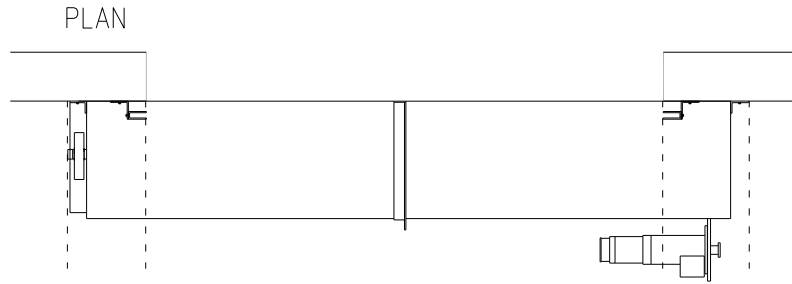
Machine Guard Automated



High Speed Fire Resistant Conveyor



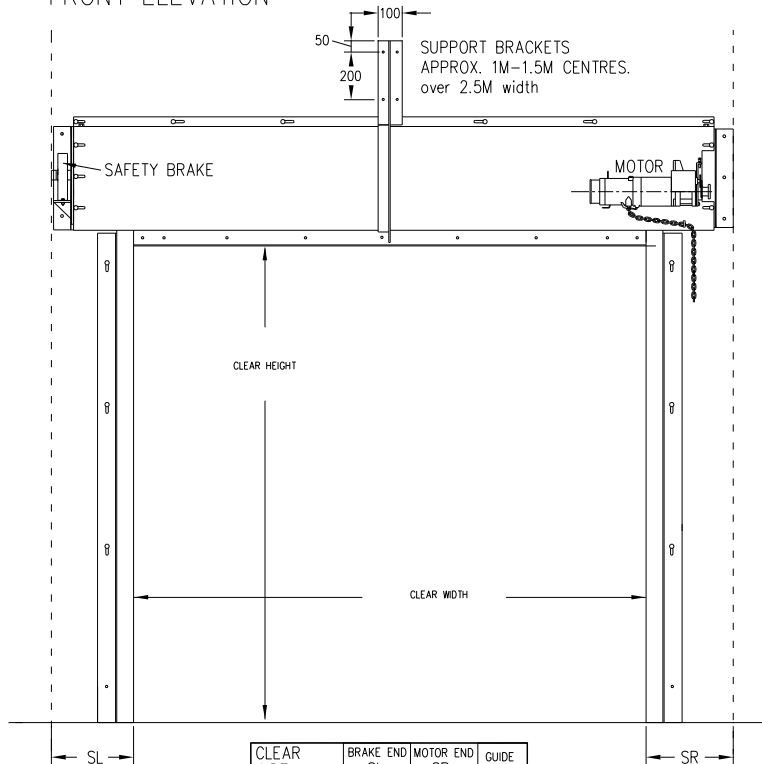
Fire Shutter to UK or US Standards



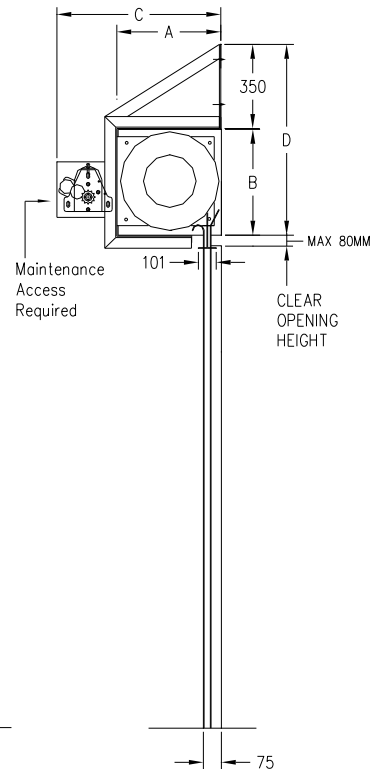
Indicative only  
may vary, check  
your dims with  
Hart

CLEAR HEIGHT	A	B	C	D
1.75	305	305	555	655
2.5	356	356	606	706
4.0	406	406	656	756
4.5	457	457	707	807
6.25	500	500	750	850
7	525	525	775	875

ELECTRIC FIRE SHUTTER  
FRONT ELEVATION



SIDE ELEVATION SR



CLEAR WIDTH	BRAKE END SL	MOTOR END SR	GUIDE DEPTH
UP TO 2.5	178	174	50
UP TO 4.0	203	199	75
UP TO 7.0	228	224	100

standard sideroom allowances refer to drawings provided for actual

**Architects Shortform:**

Electrically operated fire roller shutter to.....minutes fire resistance. To include motor drive with manual hand chain over-ride and 'controlled speed of closure' (controlled fall), and safety brake over-ride operated by (press button or .....). Fire activation by fusible link or energised to hold actuator. To include hood to enclose roller and brackets as required. Finish standard galvanised/powdercoat. All to comply with LPC assessment number 16. Further options: Audio visual alarms and delayed operation.

**Roller Shutter Data & Specification:**

**Fire resistance:**

30 minute, 60 minute, 120 minute and 240 minute.

**Size availability:**

Up to 7 meters wide and 7 meters high clear opening, there after to special design.

**Power supply:**

Single phase or three phase as specified on the quotation.

**Motor:**

Geared electric in line motor unit with limit switch override. Unit capable of brake release via fusible link or solenoid to provide safe controlled rate of door closure under gravity.

**Manual override:**

By hand chain through motor (very slow and not suitable for frequent operation)

**Shutter curtain:**

2 hour (120 mins) and 4 hour (240 mins): A minimum of 20g for doors up to 5m or 25 square meters and thereafter 18g.

1/2 hour (30 mins) and 1 hour (60 mins): A minimum of 20g discretionary above 5m or 25 square meters.

**Finish:**

Galvanised most exposed parts or powder coat to requirements. Primer finish on all other parts.

**Safety:**

An over speed safety brake is fitted to the roller so that in the event of a drive failure the shutter will be stopped from falling by the safety brake. As required by the machinery directive and BSEN standards enforced by the HSE. Presence sensing safety sensors and audio visual alarms are required to protect pedestrians and to upgrade operations.

**Fire activation:**

Normally actuator fail safe for manual or electrically reset. Connected through local or building fire and smoke control systems and supported by client risk assessment.

**Normal operation:**

Press buttons or key switch. Hold to run, Single or three phase options.

