DATA SHEET 600 v10.7

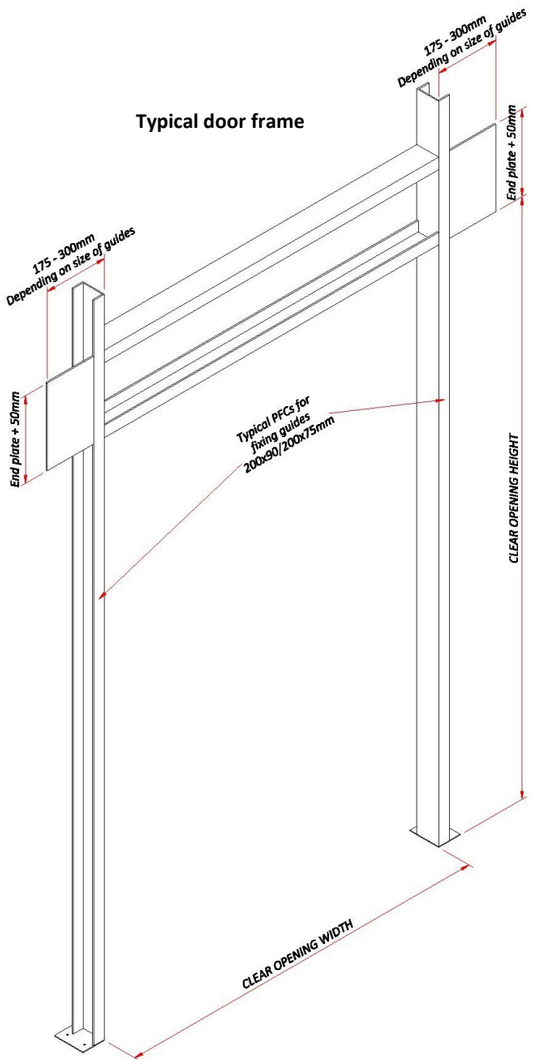
Supporting steelwork can be used for up to 2 hours fire resistance.
Steel structure to be insulated.
4 hour fire resistance requires concrete lintel and concrete block.

NOTE: Steel frames and steel lintel are required to be encapsulated in insulation to the level of the door resistance required to ensure compliance.

System Design Supporting Structure:

A) Structural steel section factor, A/V, Hp/A must be less the 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) 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.



Fire shutter Features and Appearance

NBS REF **MODEL**	L20:570 Firebrand fire roller shutter.
Control Panel	FCP03 fire door control panel with operational options.
Door sizes	Up to 7m wide x 7m high at 30 mins to 4 hours and 10Mm wide x 3.6 high at 1 hour
Fire resistance	30 minutes, 60 minutes 2 hour & 4 hour resistance non insulated
Roller box & brackets	Essential for compliance
Safety	Safety brake 'anti-fall' on door roller
Activators	*Key switch, press buttons.*
Curtain options	20G or 18G interlocking 75mm convex laths
Door speeds	Up to 200mm/second dependant on drive and gearing
Power Requirement	240 volt, single phase **OR** 415 volt + neutral for three phase

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FIRE ROLLER SHUTTER

Pictured installation, 75mm convex lath stainless steel with polished stainless enclosures in a food plant.

FIREBRAND Fire Roller shutters are designed and manufactured in the UK By Hart door systems to BS EN 16034 and tested by the BRE/LPCB To BS EN 1634-1. They are also compliant and tested to NFPA80 American standard, by UL in Chicago.

Hart's have over 70 years' experience in roller shutter door systems. Their heavy duty construction is suitable for all door openings and will efficiently deliver performance for many years.

Fire roller shutters are the most versatile of fire door systems.

The door curtain available in the universal 75mm interlocking convex section, non insulated galvanised Steel, optionally powder coated or with pre-finished plastisol coating or stainless steel.

Fire shutters are required to close automatically in fire or in power fail. This is achieved by local control and auto release of the door allowing the door to close via gravity, speed governed to less than 300mm per second. In the case of connection to building fire control pedestrian protection system is necessary.

Fire roller shutters in standard form are designed for infrequent and slow operation. Upgraded specs are available on request.

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Data Sheet: Fire shutter with 75mm lath profile

Standards & requirements:
Hart Fire Roller shutters have been tested by the British research establishment LPCB to BS EN 1634-1 non insulated to a minimum of 30 minutes and max of to 4 hours fire resistance, and are certified compliant to BS EN 16034 and 12604 and 13241. Alternative standards of construction to NFP80 USA fire standards tested by UL in Chicago, all non insulated.

Verification / monitoring:
BRE requires that all fire shutter installers, on completion, submit documentary and photographic evidence to the BRE to verify and confirm compliance of the installation. Each door is uniquely identified.

Size availability:
From small serveries up to 7M x 7M in standard form up to 4 hours resistance, and up to 10M x 3.6M at one hour fire resistance in standard specification.

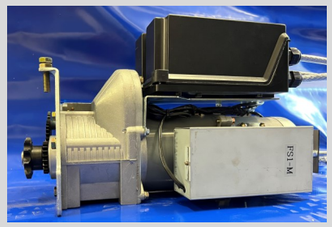
Structural requirements:
Doors up to 2 hours can be fitted to steel which is required to be totally encapsulated with fire proof insulation and a steel designed with an Hp/A of less than 230m-1. Intumescent paint can be used but not where it is sandwiched between door components and the structure.
Doors over 2 resistance require concrete, block or brick with concrete lintel.

Finish: Options
Curtain is galvanised finish with options for powder coated finish or pre -coated plastisol. Guides and bottom rail are galvanised or powder coat (max 8m wide). Non galvanised surfaces such as heavy support angles, additional frames and tube will be finished in black undercoat with option to powder coat.

Roller box, hood casing support brackets:
An essential part of the construction of a fire roller shutter, roller cover hood with either one bracket (over 2.6M in width) or two equally spaced brackets (roughly above 4M width). Optional cover for the motor and safety brake can be supplied in galvanised, powder coat or stainless finish.

Door guides & wind resistance
Guide depth dimensions vary by size including 50, 63, 75, or 100mm. Fire shutters being largely internal do not require wind resistance however if used externally up to class 5 can be provided. Best practice is to discuss extreme environments in advance.

Control panel:
Fire door control panel with audio visual warning system and internal battery backup of functions. The drive and local sensors are connected into the panel delivering the operational interface.
The panel has features including part closure, delayed activation and overrides. Repeater panels are available as an option.



Building central fire control
connection into main building control may require pedestrian safety devices. See the operational protocols datasheet

Motor Drive:
Standard geared motor drive, roller chain drive, combined with a separate safety brake conforms to safety standards. The unit includes a controlled fall facility to close the door via gravity in the absence of power providing **FAIL SAFE closure initiated standard by actuator.**
Emergency operation is available via hand chain although very slow in operation.

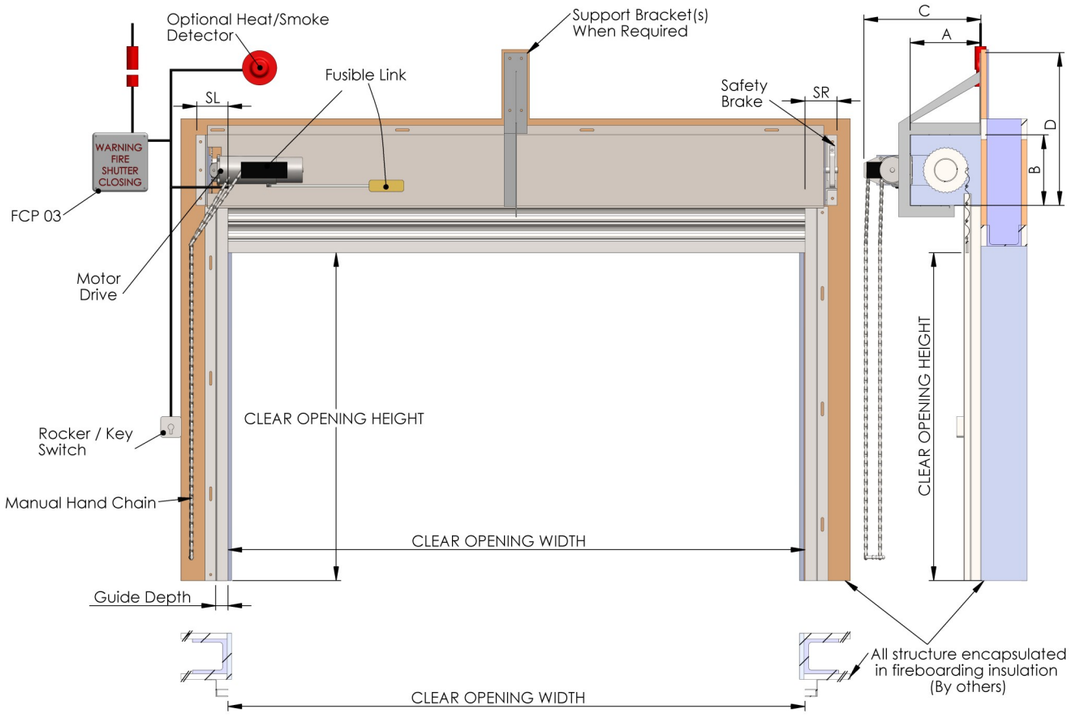
Speed : fire doors are slow.
Single speed circa 100-200mm per second, doors over 5M will be

Head Room:
Dimensions are indicative only, please confirm dimensions with Hart if required.

Clear Height	A	B	C	D
1.75	305	305	555	655
2.5	356	356	606	706
4	406	406	656	756
4.5	457	457	707	807
6.25	500	500	750	850
7	525	525	775	875

Side Room:
Standard minimum side room allowances shown.
Refer to drawings provided for actual dimensions.

Clear Width	Motor End SL	Brake End SR	Guide Depth
Up to 2.5	178	175	50
Up to 4.5	203	199	75
Up to 7.0	228	224	100



Critical Operation in Fire:
Fire roller shutters have to conform to structural and operational requirements so they must close and be fail safe in a fire situation for the protection of people and property. We have condensed an extensive list of options into the following preferred operational protocols. These are based on Hart's interpretation of the relevant standards, and all proposals made are subject to hazard & risk assessment by principal designer and a qualified fire risk specialist with reference to building control officer, specifically for the project.
In the case of power closure pedestrian safety is the prime motivator. Only the project designer/or owner can know and cover all eventualities. Remember all staff should be trained in how doors function and should be used.
NOTE: Hart Door Systems do not verify that any of these protocols are compliant for any individual installation, they are our understanding following research and reference to standards, equipment manufacturers, the Door & Hardware Federation and their ongoing advisory discussions , and of course practicalities of shutter installation.

Operational Options and risk assessed Compliance:

A: Basic fire shutter up to 4 hours resistance, normal operation key or press button, hold to run, this option has no means of auto close, it can be used for example cupboards whereby the door is closed at all times.

A1: Fusible link activation in fire, normal operation hold to run door will auto close by gravity when local temperature exceeds 68° C. and no people would be in the location.

B: Auto close in fire or power fail via local sensors, Recommended, normal operation hold to run in door full view, fire activation triggered by locally mounted heat / smoke detectors via door control panel (FCP03 & repeater panel to either side of the door) incorporating audio and visual warning, giving pre warning of door closing on adjustable timers.
The door will fully close when released without stopping, via gravity fall, speed not to exceed 300mm per second. The door will only have normal operation when power is available.

C: Auto close via Building fire control system. A central building fire control will operate all doors in response to a potentially distant signal via door control panel (FCP03 & repeater panel to either side of the door) incorporating audio and visual warning, giving pre warning of door closing on adjustable timers.
The door will fully close when released without stopping, via gravity fall, speed not to exceed 300mm per second. Normal operation will be hold to run in full view of the door, The door will only have normal operation when power is available.

C1. Note as the door can close randomly pedestrian protection may be required, it is not required under BS EN 12604 when closing via gravity. BS EN 12453 dictates pedestrian protection is required when closing in power operation, Risk assessment with relevant advice will dictate. Safety sensors may be added that will operate only while power is available. Optional Light curtain mounted adjacent to the door guide. (in most cases 2 will be required one to either side). This will stop the door if a pedestrian is present, delay then reopen, when the door reaches the fully open position it will immediately close, this cycle will continue until a pre programmable number of attempts (1 to infinity100), it will then ignore the signal and close, or remain static if the alarm signal is removed . All this providing power is still available. The alarms are constant during this process should power fail the door will fully close under gravity without stopping, at controlled speed.

D: State of the art system fully functioning door system with guaranteed power supply, momentary press to run both up and down, door is driven by power in all cases and has safety light curtain pedestrian sensors to provide a no contact safety system.

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