

2 & 4 Hour Fire Shutter

Steel Roller Shutters



2 or 4 Hour Fire Resistant Roller Shutters are designed for openings with fire-resistant walls where isolating or resisting the passage of fire is required. They are commonly used as part of an integrated fire prevention system in applications such as shopping centres, hospitals, aged care facilities, hazardous goods storage, warehouses, factories and office buildings.

FEATURES

- Certified integrity 2 or 4 hour fire rated
- Controlled descent mechanism
- Interlocking steel slats

DOOR DIMENSIONS - UNDRENCHED DOORSETS (NON INSULATED)

- Maximum Height: 5000mm*
- Maximum Width:
5000mm* (4 hour) / 8000mm* (2 hour)

*Total size must not exceed 20m².

DOOR DIMENSIONS - OVERSIZE (DRENCHED DOORSETS)

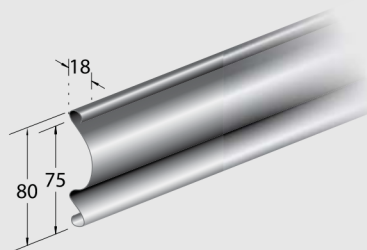
- Maximum Height: 5000mm*
- Maximum Width: 8000mm*

*Total size must not exceed 27.5m²

NOTE: 2 or 4 Hour Fire Resistant Roller Shutter doorsets requiring insulation or greater than 20m² must be incorporated with drenchers to each face of the curtain. Drenchers strictly by client. See Insulation (Drencher System) requirement details on next page.

RECOMMENDED SPECIFICATIONS

2 or 4 Hour Fire Resistant Roller Shutter (include required FRL [fire resistance level] e.g. -/120/-) with 75mm high slats in 1.0mm thick steel as manufactured by Airport Doors. The Roller Shutter operates by means of a flexible curtain made of interlocking steel slats winding onto an overhead drum and guided in steel door guides.



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The Fire Shutter is certified in accordance with Australian Standard 1530.4-2005 and Australian Standard 1905.2-2005.

CERTIFIED TESTING

The Fire Roller Shutter was tested by the CSIRO (Certificate of Test No. 364) in accordance with Australian Standard 1530, Methods for fire tests on building materials, components and structures, Part 4 – 1990, Fire-resistance tests of elements of building construction. The Fire Shutter was tested with the drum and the descent limiting gear exposed to the fire.

FORMAL OPINION ASSESMENT

2 & 4 Hour Fire Resistant Roller Shutters are manufactured based on and in accordance with the test results, the performance requirements of AS 1530.4-2005, and the conditions set out in Assessment Number FCO-2859 (CSIRO 2011) to meet the required fire-resistance levels if tested in accordance with AS 1530.4-2005.

CURTAIN

The Fire Resistant Roller Shutter curtain is manufactured from 75mm high by 1.0mm thick roll-formed, interlocking steel slats. Alternating slats are fitted with cast end clips to prevent lateral movement of the curtain and ensure smooth operation.

INSULATION (DRENCHER SYSTEM)

Where insulation is required (e.g. FRL -/120/30 or -/240/30) or where door is over 20m², the fire resistant roller shutter must be incorporated with a drencher system that provides a minimum of 0.2L/s per square metre uniformly to both sides of the door curtain. Drencher system is strictly the responsibility of the client (builder).

FINISH

The curtain is roll-formed from galvanised material as standard or can be powder coated when specified. The drum and drum support brackets are prime-coated.

BOTTOM RAIL

The bottom rail is manufactured from two 50 x 50 x 5mm steel angles fitted back to back to the bottom slat.

DOOR GUIDES

The door guides, designed to suit curtain depth and working clearance, are manufactured from 2.5mm or 3mm thick roll-formed galvanised steel with a depth of 78mm or 100mm (depending on door width). The door guides are fixed to the walls using steel fixing lugs at approximately 500mm centres.

DRUM & SPRING ASSEMBLY

The drum consists of a seamless welded, cylindrical tube revolving around a central steel axle and encasing helical torsion springs engineered to suit door size and weight. The springs are rolled from high grade spring wire and tempered. The drum is designed to provide minimal deflection over the door width. The springs have provision for automatic release with a split axle mechanism to allow the door to automatically close (when activated) and to provide assistance in opening the door before resetting.

DRUM SUPPORT BRACKETS

Fire Shutter drum support brackets are manufactured from mild steel plate, with a minimum thickness of 8mm. The brackets are fitted with flange type ball bearings to suit the shaft diameter and door weight and are fixed to a structural fire-resistant (non-combustible) wall.

BULKHEAD / HOOD

A bulkhead or hood is required over the roller drum and must be incorporated with the door to achieve compliance. Bulkhead to be provided by client (builder), alternatively pressed metal hood to be provided by client (builder) unless otherwise specified.

FIXING REQUIREMENTS

The door opening (walls and threshold) must be of a non-combustible material to comply with the relevant Australian Standards (refer to AS1905.2-2005). In addition, the opening construction must also be structurally sound and have adequate strength to support the Roller Shutter and its fixing



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requirements in standard and in fire conditions. Consult manufacturer for further details.

CLOSING DESCENT MECHANISM

The door closing descent mechanism is as standard actuated by a **'Fusible Link only'** which is designed to break when the nominal temperature reaches above 71°C. The fusible link is fitted on the roller drum side no further than 250mm from the roller drum and exposed to general airflow. It is connected to a spring loaded automatic release arm. When the fusible link is broken, the release arm is activated to release door spring tension (and disengage the motor where fitted) enabling the door to free-fall under controlled descent. Where the opening is greater than 4m wide, the shutter will have at least two fusible links (connected via a cable) located at each end of the opening. Optional **Fusible Link with 24vDC Holding Magnet** can be used on motorised and manual chain operated fire shutters that are connected to the building's Fire Indicator Panel (FIP). It is highly recommended that the FIP has battery back-up in case of power outage that is not caused by fire signal. Where required, a smoke detector or fire alarm can be interfaced from the FIP to the Fire Shutter (strictly responsibility of the client). The door closing descent mechanism is actuated by the Holding Magnet when the FIP receives a signal of fire in either the door vicinity or other area (depending on FIP setup), the FIP then terminates the continuous 24vDC power to the holding magnet, releasing the clutch and the door spring tension enabling the door to free-fall under controlled descent. The fusible link acts as a back-up in case of magnet release failure and will actuate descent as described above. NOTE: All wiring and 24vDC power supply from FIP to the holding magnet is the responsibility of the client (builder).

Optional **Fusible Link with ETL** can be used on motorised and manual chain operated fire shutters that are connected to the building's FIP. Where required, a smoke detector or fire alarm can be interfaced from the FIP to the Fire Shutter (strictly responsibility of the client). The door closing descent mechanism is actuated when the FIP upon receiving a fire signal sends an electrical pulse to the ETL (situated at the door) which melts the link releasing the clutch and the door spring tension enabling the door to free-fall under controlled descent. Should the FIP fail to send an electrical pulse to the ETL, the ETL is also activated by temperature. The fusible link acts as a back-up in case of ETL failure and will actuate descent as described above. NOTE: All wiring from FIP to the ETL is the responsibility of the client (builder).

The drum automatic release is fitted with a specially designed automatic controlled descent governor to match the door size and weight. The governor is designed to provide an average speed of descent between 250mm to 300mm per second. **NOTE:** The area around the door opening must be kept clear at all times.

OPERATION

Roller Shutters operate by means of a flexible interlocking steel curtain, revolving on a drum and guided in steel door guides. They are installed to the inside face of an opening and overlap the nibs and lintel ('behind-fix'). 2 and 4 Hour Fire Shutters are available in hold-open operation, hand operation, manual chain operation or electric operation.

HOLD OPEN

The curtain remains open at all times except when the closing descent mechanism is actuated by the sensing device.

HAND OPERATION

Fire Shutters can be hand-operated up to 2200mm height and 2000mm width.

CHAIN OPERATION

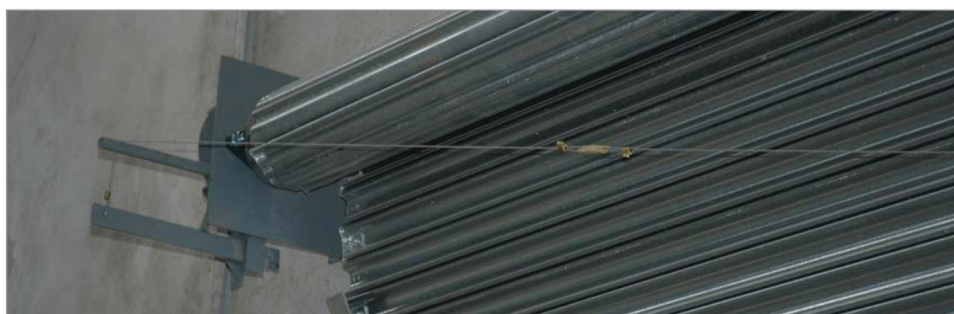
Gearing is fitted to one end of the Roller Shutter and matched to suit door size and weight. The curtain is opened and closed by hand chain via a reduction gear mechanism. **NOTE:** Chain operation is not recommended for Fire Shutters over 16m². Chain locks are not fitted to Fire Shutters.

MOTORISATION (ELECTRIC OPERATION)

Motorisation is via a geared electric motor with controlled descent and incorporates a standard reversing starter push-button station (control box) and an emergency hand chain operation in case of a power outage. The standard push-button station offers 'Up', 'Down' and 'Stop' functions.

Operator selection is dependent on the door size, door weight, availability of power and the door's application. Motorisation is available in three-phase (415v) as standard, or single-phase (240v) power.

The provision of adequate mains power supply and isolator to motor location is the responsibility of the client. Wiring from the isolator and commissioning of the door, motor controllers and any ancillary hardware is by client, unless otherwise stated in writing.



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LABELING/COMPLIANCE CERTIFICATES

Fire resistant roller shutters are clearly labeled with a metal tag mechanically affixed to the bottom rail. On completion and testing of the fire resistant roller shutter, Airport Doors will provide a certificate of compliance when requested.

MAINTENANCE & RESETTING

As indicated in AS1905.2, fire-resistant roller shutters require regular inspection and need to be re-certified as operable. The frequency of these inspections would appropriately be considered in consultation with the regulatory authority.

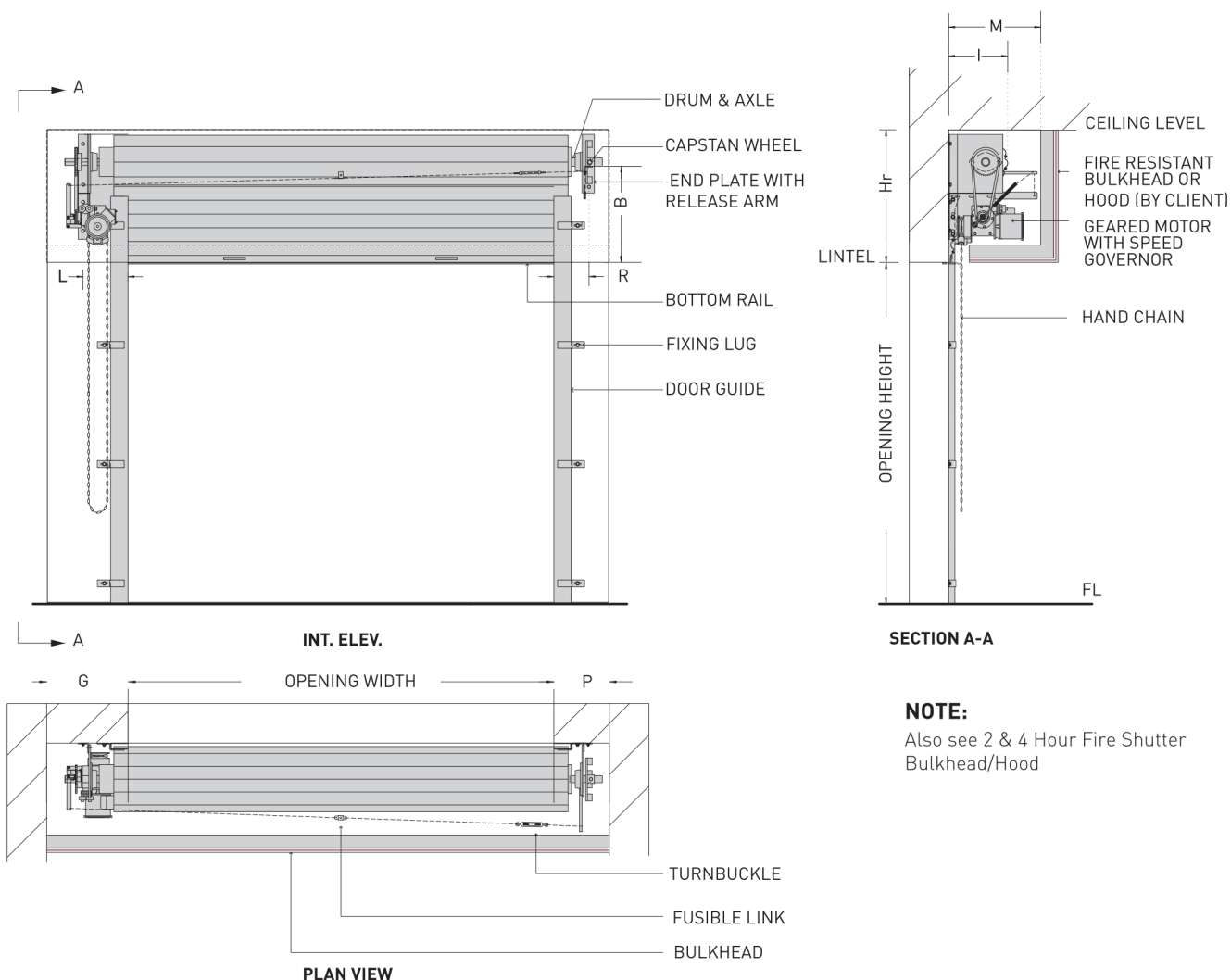
Where fire-resistant roller shutters are being used other than 'Hold-Open' (e.g. operated daily) it is very important that doors are not only inspected but also serviced on a regular basis.

NOTE: Where a fire has not occurred but the shutter's descent mechanism has been actuated, resetting of the fire shutter to make it operable again is required. In the case where a fire has actuated the descent mechanism, the heat absorbed and the inertia of the curtain make future manual opening of the curtain unlikely.



2 & 4 Hour Fire Shutter

Technical Specs: Steel Roller Shutters



NOTE:
Also see 2 & 4 Hour Fire Shutter Bulkhead/Hood

CLEARANCE DETAILS - 2 HOUR (FRL -/120/- or -/120/30)

HEIGHT UP TO	WIDTH UP TO 8m				OPERATION	DRIVEN END		PLAIN END	
	Hr	B	I	M		G	L	P	R
2400	770	550	410	535	HAND OPERATION	P	R	300	220
4300	810	570	430	535	CHAIN OPERATION	500	265	300	220
5000	830	590	500	535	MOTORISATION	500	265	300	220

CLEARANCE DETAILS - 4 HOUR (FRL -/240/- or -/240/30)

HEIGHT UP TO	WIDTH UP TO 8m				OPERATION	DRIVEN END		PLAIN END	
	Hr	B	I	M		G	L	P	R
2400	800	580	410	535	HAND OPERATION	P	R	300	220
4300	900	660	430	535	CHAIN OPERATION	500	265	300	220
5000	920	685	500	535	MOTORISATION	500	265	300	220

Notes:

- Standard chain operated or motorised doors have the drive unit fitted outboard.
- Door-stops on door guides are fitted on hand-operated or chain-operated shutters.
- Total door size must not exceed 20m² if undrained or 27.5m² when incorporated with a sufficient drainer system.
- The Fire Resistant Roller Shutter is part of a fire rated wall system, therefore the opening construction (wall and threshold) must be fire resistant in accordance with AS1530.4-2005 and must be installed in accordance with the conditions set out in AS1905.2-2005, AS1530.4-2005 and Letter of Opinion Assessment #FCO-2859 [CSIRO 2011].



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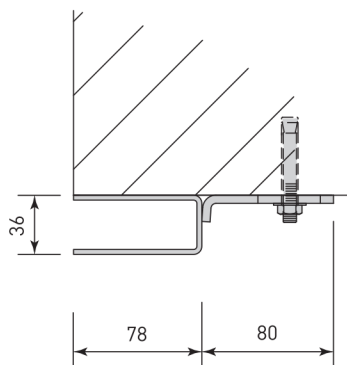
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Door Guides

Technical Specs: Steel Roller Shutters

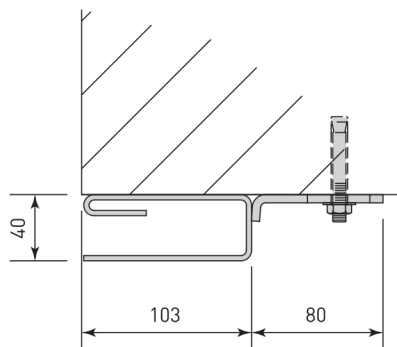
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STANDARD DOOR GUIDE

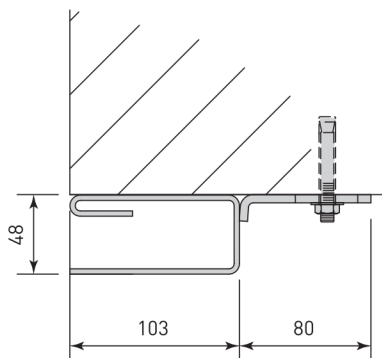


WINDLOCK DOOR GUIDES

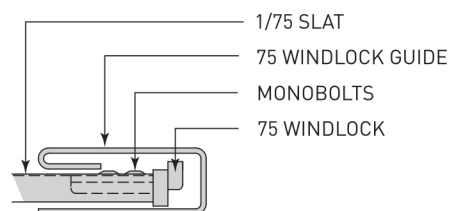
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SERIES 100/130

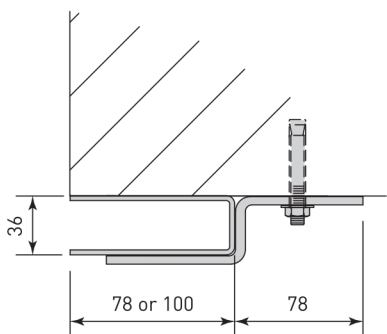


DETAIL : WINDLOCK



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