



FireMaster® A1 Concertina™ Open

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Detailed description

The FireMaster® A1 Concertina™ Open is an active fire curtain barrier assembly that comprises a folded/ pleated fire-resistant fabric mounted inside a headbox and fixed to a bottom tray; this can be fixed on either side to steel pulley tapes which are wound on to a 15 mm-diameter drive shaft. The drive shaft is powered by internal 24 V d.c electric motor(s) via a chain and sprocket. They are enclosed within a 1.6 mm galvanized mild steel box. A bottom tray to suit the deflection performance requirements of the project and the desired ceiling configuration is fitted to the bottom edge of the fabric curtain.

Motors meet all applicable safety standards and contain the necessary drive mechanisms, a mechanical epicyclical gearbox retarder, automatic overload protection and both automatic and manual distance travel positioning, linked to an internal 24 V d.c electromagnetic brake with regenerative braking system. When motors are retracted their internal drive motor shall be isolated from all power and the barrier shall be held in position by an internal electromagnetic brake. This ensures that the barriers not drift upward or downward They are tested for reliability, durability and self-closing to BS 8524-1 Annex E and are tested for operation at temperatures of 400 °C as required by BS 8524-1 Annex G.

Operated with fail-safe by gravity, using patented true TOTAL, Total Gravity Fail Safe (TGFS), in accordance with BS 8524-1 Annex D, and move to their fire-operational position even in the event of open or closed circuit wiring, or total system corruption, with controlled braking system and drive mechanisms. All working parts are enclosed and protected within the steel roller, and are tested as part of the complete assembly for fire resistance.

A range of heavy bottom tray weights ensures positive operation when subjected to pressure. The engineer shall declare to the manufacturer such pressures, or wind loads, in advance to ensure operational conformity.

The barrier assemblies operate with the barrier edges retained in side retention systems to resist pressure (as standard 20Pa) and impact (Double Severe Duty), and to remove edge gaps in accordance with BS 8524-1, Annex D.

Primary, secondary and auxiliary power supplies are CE marked in accordance with the Construction Products Regulations (305/2011) when tested to BS EN 12101□10. Control panels shall be tested to BS ISO 21927□9.

All power supplies and control panels are tested in accordance with the Low Voltage Directive (2006/95/EC) BS EN 61010□1, EMC Directive (2004/108/EC) BS EN 12101□10, BS EN 61000-6-3 and BS EN 50130□4, Machinery Directive (2006/42/EC) and ROHs Directive (2011/65/EU).

Any optional ancillary devices are tested as part of a complete specimen to BS 8524-1, Annex H.

Operation:

In the event of mains power failure, they remain retracted using their own

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dedicated battery back-up power supply for a pre-determined period (nominally 30 minutes). If signalled to descend during this period, they shall fail-safe by gravity in a controlled manner to their fire-operational position. At the end of the pre-determined time delay, they fail-safe by gravity in a controlled manner. This safety feature is essential to avoid dangerous guillotine/ free-fall deployment.

Movement is commenced upon initiation of power or system failure, and the curtain moves to the fire-operational position, in all operating modes, at site-specific adjustable and synchronized velocities within the range of 0.06–0.15 m/s using the unique VarioSpeed™ function. Operating speeds are adjustable without altering bottom bar mass. Speeds may be dictated by those authorities having jurisdiction for 'safety in use' according to the location, nature or function of each unit.

They have the facility to deploy to a partial drop position prior to moving to their fire-operational position under both mains and emergency power. In their retracted or 'stalled' position, all power is removed from the motor(s) to prolong motor life. Any that require multiple overlapping barriers have a continuous bottom bar system conjoining the run with mutual operation, i.e. one down – all down (handshaking).

Using a 'soft ascent facility' to ensure no damage to the surrounding ceiling interface when retracting, they have built-in protection in the event that they are prevented from ascending to their retracted position, or descending to their fire-operational position. This ensures that they are always in their required position and avoids damage to the barrier assemblies' mechanism and surrounding ceiling finishes. In sensitive ceiling aesthetic areas, a unique patented SLAT® ceiling interface can be provided. Any combination of the alarm/ control signal provided by the electrical subcontractor and/ or the specified fail-safe functions will activate the system.

Fabric:

The fabric material is tested as part of the complete assembly, as either a single construction or as an overlapped and conjoined construction, and installed in accordance with the fire resistance test in accordance with BS EN 1363□1 and □2 as required by BS EN 1634□1 in accordance with BS 8524□1.

The fabric material is tested independently to reaction to fire tests in accordance with BS EN ISO 1716 to achieve an 'A1' classification in accordance with BS EN 13501□1+A1.

The fabric material is tested independently for formaldehyde concentration in accordance with BS EN ISO 14184□1:2011 to achieve <16 ppm.

The fabric material is tested independently for asbestos in accordance with DIHM ASB/01 as set out in HSE Guide HSG248 to achieve 'No Asbestos Detected'.

Fabric type is EFP™ A1: a glass fibre, stainless steel wire-reinforced fabric, coated with specially developed fire-retardant polymer 665 g/m²–5% +10%.

Product guidance - As Standard

Fire resistance:

180 minutes' integrity.

Period of radiation:

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55 minutes <15 kW/m² (open).

Classification:

E180 EW30 C1 Grade 1, A1.

Standards, certification and testing:

- BS 8524-1:2013, Specification for active fire curtain barrier assemblies.
- BS EN 1634-1:2014, 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.
- BS EN 1363-1:2012, Fire resistance tests – Part 1: General requirements.
- BS EN 1363-2:1999, Fire resistance tests – Part 2: Alternative and additional procedures.
- BS EN 13501-2:2007+A1, Fire classification of construction products and building elements. Classification using data from fire resistance tests, excluding ventilation services rating.
- BS EN 14600:2005, Doorsets and openable windows with fire resisting and/ or smoke control characteristics. Requirements and classification.
- BS EN ISO 1716:2010, Reaction to fire tests for products. Determination of the gross heat of combustion. (Calorific value).
- BS EN 13501-1:2007+A1:2009, Fire classification of construction products and building elements. Classification using test data from reaction to fire tests.
- BS EN ISO 14184-1:2011. Textiles. Determination of formaldehyde. Free and hydrolysed formaldehyde (water extraction method).
- HSG248, The analysts' guide for sampling, analysis and clearance procedures.
- BS 6323-5:1982, Specification for seamless and welded steel tubes for automobile, mechanical and general engineering purposes. Specific requirements for electric resistance welded (including induction welded) steel tubes.
- BS EN ISO 9001:2008, Quality management system.
- BS EN ISO 14001:2004, Environmental management system.
- Complete barrier assemblies are certified with an independent accredited certification body operating a Level 5 scheme as defined in ISO Guide 65, and in accordance with BS EN ISO 17065.
- Complete barrier assemblies are certified with an independent accredited certification body operating an accredited UKAS scheme for installation, commissioning and servicing.
- Complete barrier assemblies shall be tested for fire resistance to BS EN 1634-1 as required by BS 8524-1.
- Complete barrier assemblies shall be tested for impact to BS 5234-2 as required by BS 8524-1.
- Complete barrier assemblies shall be tested for reliability, durability and self-closing to BS EN 14600 as required by BS 8524-1.
- Complete barrier assemblies shall be tested for gravity fail-safe as



required by BS 8524□1.

- Complete barrier assemblies must show tested ability to adjust and control speeds on site to suit specific site requirements as required by BS 8524□1.
- Motor(s) used within barrier assemblies: the above tests shall be tested for operation at temperatures of 400°C as required by BS 8524□1.
- The fabric used within the barrier assemblies shall be tested to BS EN ISO 1716.

Warranty:

One year.

Product specification

Manufacturer

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Product reference FireMaster® A1 Concertina™ Open Active Fire Curtain Barrier

Size []

Accessories [None]
[Beam protection and obstruction warning] - Will sound in the event of an obstruction being placed at the barrier drop line.
[Emergency retract] - Touch-button retract facility for multi-escape.
[Split drop delay] - Will partially deploy to pre-determined level to permit escape.
[Visual alert system] - Light warning system.
[Voice warning] - Auto-spoken multi-message facility.