SPECIFICATION
FIREMASTER® S
ACTIVE FIRE CURTAIN BARRIER ASSEMBLIES

In accordance with:

BSI PAS 121
BS EN 1634-1
BS EN 1634-3
BS EN 12605
BS EN 14600
BS 476-6+A1
BS 476-7

Period of Fire Resistance:
120 minutes (2 hours) integrity

Period of Radiation:
27 minutes <15kW/m^2

Maximum Dimensions:
Approved for spans 30 m width (1181.102 in), heights up to 6 m (236.220 in)

Certification:
The FireMaster® S active fire curtain barrier assembly shall have test evidence to the applicable standards detailed below. The manufacturer shall operate and be certified to BS EN ISO 9001 for quality management systems, and BS EN ISO 14001 for environmental management systems. The manufacturer shall operate and shall have certification and listing with an independent accredited certification body operating an accredited UKAS installer, commissioning and servicing scheme.

Product Name and Model:

FireMaster® S active fire curtain barrier assemblies

General description:
An electrically operated FireMaster® S active fire curtain barrier assembly used to form a virtually continuous barrier as a fire separating element.

NOTE For ease of reference the FireMaster® S active fire curtain barrier assembly has been referred to the "barrier assembly -ies" throughout the remainder of this specification.

Barrier assemblies shall meet the requirements of BSI PAS 121 (where appropriate) and be tested for impact to BS EN 949, and BS 5234-2 to "double" the severe duty, be tested for controlled speeds in all modes including fail-safe by gravity on total power failure (must not be reliant on secondary power supplies to provide the 'braking effect'), be tested for self-closing and mechanical resistance to BS EN 12605, be tested for fire resistance to BS EN 1634-1 (BS EN 1363-1 & -2), and be classified to BS EN 13501-2, and be tested for smoke leakage to BS EN 1634-3.

Description:
Active fire curtain barrier assemblies shall comprise of a fire resistant fabric which is wound on to a steel roller, with 1:600 deflection performance to BS 6323-5, which is powered by an internal 24Vdc electric motor. They are enclosed within a 1.2 mm (0.047 in) galvanized mild

steel box. A bottom bar to suit the deflection performance requirements of the project and the desired ceiling configuration in fitted to the bottom edge of the fabric curtain.

Motors shall meet all applicable safety standards. Motors shall contain the necessary drive mechanisms, a mechanical epicyclic gearbox retarder, automatic overload protection and both automatic and manual distance travel positioning, linked to an internal 24Vdc 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 the barriers not drift upward or downward.

The barrier assemblies shall operate with fail-safe by gravity, using patented true TOTAL (TGFS), in accordance with BSI PAS 121, and be able to 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 shall be totally enclosed and protected within the steel roller and shall be tested as part of the complete assembly for fire resistance.

The barrier assemblies must show the tested ability to use a range of heavy bottom bar weights with a minimum standard weight of 3 kg/m (2.015 lbs/ft) with the facility to increase this weight to 10 kg/m (6.719 lbs/ft) to ensure 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 must show the ability to operate with the barrier retained in side channels to resist pressure (as standard 20 Pa (0.08 in water) and impact (Double Severe Duty) and remove edge gaps.

Additionally, the motor shall be tested for operation at temperatures of 300 °C (572 °F) as required by BSI PAS 121.

Operation:
The barrier assemblies shall move to their fire operational position in a controlled manner when all consumable primary and auxiliary power sources are removed, in the event the wiring, open or short circuit, or system corruption, or any combination thereof.

The barrier assemblies shall fail-safe by gravity, using patented true TOTAL (TGFS), and ‘drive up’ with mains power available. In the event of mains power failure, they shall remain retracted using their own 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 shall fail-safe by gravity in a controlled manner. This safety feature is essential to avoid dangerous guillotine/free-fall deployment.

The barrier assemblies must commence movement upon initiation or any initiation, power or system failure and move to the fire operational position with site specific adjustable and synchronised velocities within the range of 0,06 m/s to 0,15 m/s (2.362 in/s to 5.905 in/s) using the unique VarioSpeed™ function. Operating speeds shall be site 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.

SPECIFICATION
FIREMASTER® S
ACTIVE FIRE CURTAIN BARRIER ASSEMBLIES

The barrier assemblies shall have the facility to deploy to a partial drop position prior to moving to their fire operational position under both mains, and emergency power. Barrier assemblies in their retracted or 'stalled' position shall have all power removed from the motor(s) to prolong motor life.

The barrier assemblies shall have a "soft ascent facility" to ensure no damage to the surrounding ceiling interface when retracting. The barrier assemblies shall have a 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 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 shall activate the system.

Fabric:
The fabric material shall be tested as part of the complete assembly in the orientation and standard use of the application and installation 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 PAS 121.

The fabric material shall be tested as part of the complete assembly (where applicable) for permeability to BS EN 1634-3 with a rate <3m^3/h/m (105.944ft^3/h/ft) head & jambs only at ambient temperature at 25 Pa (0.1 in water) in accordance with PAS 121. The fabric material shall have a leakage rate <0.2 ± 0.2m^3/h/m^2 (7.062 ± 7.062ft^3/h/ft^2).

The fabric material shall be tested independently for fire propagation to BS 476-6+A1, and for surface spread of flame to BS 476-7 to achieve National Class '0' in accordance with A13(b) of Approved Document B (Volumes 1 & 2) 2006 Edition 'Fire Safety' to England & Wales Building Regulations 2000.

Fabric type is EFP™ 2/1000/SS a glass fibre, stainless steel wire reinforced, fabric coated with an micronized aluminium filled fire retardant silicone elastomer 870 g/m^2 (0.178 lbs/ft^2) -5% +10%.

Optional Extras:
- Voice warning:
  Audio or spoken multi message facility when mains or emergency power is available.
- Beam protection and obstruction warning:
  A beam detector, with delay timer which will sound in the event of any obstruction being placed in the barrier drop line when mains or emergency power is available.
- Visual alert system:
  Light warning system when mains or emergency power is available.
- Split drop delay:
  To partially deploy to pre-determined level to permit escape, and initial smoke containment. After delay fully deploys to its fire operational position when mains, or emergency power is available.
- Emergency retract:
  Touch button retract facility for multi-escape and emergency service ingress/egress when mains or emergency power is available.

SPECIFICATION
FIREMASTER® S
ACTIVE FIRE CURTAIN BARRIER ASSEMBLIES

Manufacturers:
Subject to compliance with all requirements set out in this specification, manufacturers offering products may be incorporated into the work are limited to the following:

Coopers Fire Limited, Edward House, Penner Road, Havant Hampshire, PO9 1QZ, United Kingdom. Tel +44 (0)23 9245 4405, Fax: +44 (0)23 9249 2732, Email: sales@coopersfire.com, Web: http://www.coopersfire.com

Warranty:
The manufacturer shall submit a written warranty for a period of one (1) year. If any part of the works of this section, including design, fabrication or installation are sublet to any party, such party shall provide a collateral warranty equivalent to the warranty.

Product certification, performance and/ or testing:

- Complete barrier assemblies shall be tested for fire resistance to BS EN 1634-1 as required by BSI PAS 121
- Complete barrier assemblies shall be tested for smoke leakage to BS EN 1634-3 as required by BSI PAS 121
- Complete barrier assemblies shall be tested for impact to BS EN 949 as required by BSI PAS 121
- Complete barrier assemblies shall be tested for mechanical resistance to BS EN 12605, and for self-closing to BS EN 14600 as required by BSI PAS 121
- Complete barrier assemblies shall be tested for gravity fail-safe as required by BSI PAS 121
- Complete barrier assemblies must show tested ability to adjust and control speeds on site to suit specific site requirements as required by BSI PAS 121
- Motor(s) used within barrier assemblies the above tests shall be tested for operation at temperatures of 300 °C as required by BSI PAS 121
- The fabric used within the barrier assemblies shall be tested to BS 476-6+A1
- The fabric used within the barrier assemblies shall be tested to BS 476-7

Approving standards:

The following standards apply to this product:

- BSI PAS 121:2007, Specification for active fire curtain barrier assemblies and active fire barrier assemblies with smoke
- BS EN 1634-1:2000, Fire resistance tests for door and shutter assemblies. Fire doors and shutters
- BS EN 1634-3:2004, Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware. Smoke control test for door and shutter assemblies
- BS EN 1363-1:1999, Fire resistance tests – Part 1: General requirements
- BS EN 1363-2:1999, Fire resistance tests – Part 2: Alternative and additional procedures
- BS EN 949:1999, Windows and curtain walling, doors, blinds and shutters. Determination of the resistance to soft and heavy body impact for doors
- BS EN 12605:2000, Industrial, commercial and garage doors and gates. Mechanical aspects. Test methods.

SPECIFICATION
FIREMASTER® S
ACTIVE FIRE CURTAIN BARRIER ASSEMBLIES

- BS EN 14600:2005, Doorsets and openable windows with fire resisting and/ or smoke control characteristics. Requirements and classification
- BS 476-6:1989+A1:2009, Fire tests on building materials and structures. Method of test for fire propagation for products
- BS 476-7:1997, Fire tests on building materials and structures. Method of test to determine the classification of the surface spread of flame of products
- 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