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Specification for the Coopers SmokeStop automatic smoke barrier

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Product Reference:

Coopers SmokeStop Automatic Smoke Barrier

Description:

SmokeStop is an electrically operated automatic smoke barrier, used to form a virtually continuous barrier against smoke, heat and hot gases.

Approved Standards:

The following standards apply to this product:

BS EN12101-1:2006

*Smoke and heat control systems. Specification for smoke barriers*

BS EN1363-1:1999

*Fire resistance tests. General requirements*

BS EN1634-3:2004

*Fire resistance tests for door and shutter assemblies. Smoke control doors and shutters*

BS7346-3:1990

*Components for smoke and heat control systems. Specification for smoke curtains*

BS476-6:1989

*Fire tests on building materials and structures. Method of test for fire propagation for products*

BS476-7:1997

*Fire tests on building materials and structures. Method of test to determine the classification of the surface spread of flame of products*

BS476-20:1987

*Fire tests on building materials and structures. Method for determination of the fire resistance of elements of construction (general principles)*



#### Product Performance:

Complete product tested to BS EN12101-1:2006 achieving a rating of 150mins integrity (600°C) and classified as ABS1/3. Product is CE Marked in accordance with Annex ZA of the said standard.

Designed to operate for 1,000 cycles at normal ambient temperatures in the range from 0°C to 60°C, and to withstand fire at temperatures up to 600°C for over 150min once only.

The fabric has a Class 1 surface spread of flame when tested to BS476-7:1997 and a fire propagation index I=2.7 when tested to BS476-6:1989. It is therefore rated Class 0 to the UK Building Regulations.

#### General Description:

The Coopers SmokeStop automatic smoke barriers (curtains) comprises of a fire resistant fabric on a steel roller, powered by an internal 24volt/DC electric motor including gearbox, electromechanical distance travel/limit switches, linked to an internal 24volt/DC electromagnetic brake which allows the barrier to remain in the retracted position when all power is removed from the motor unit. The system must also have full fail-safe by 'Gravity' with controlled braking system and drive mechanisms. System must show the ability to operate with the barrier retained in side channels to resist fire pressure.

The motor/roller/fabric/bottom bar assembly is located in a 1.2mm galvanised rectangular casing, which provides protection for the barrier (curtain) and acts as a fixing element to the building structure.

Widths exceeding 5m shall be continuously overlapped and conjoined. Minimum width is 800mm, maximum widths are unlimited. Drops are assessed to 10m.

#### Fabric

The curtain material is a satin weave fibreglass fabric with a silver polyurethane coating on both sides. It is 0.4mm thick, and weighs approximately 455g/m<sup>2</sup> in its finished form. The fabric is manufactured in widths of approximately 1.5m, and is tested in the vertical orientation including the sewing yarns.

#### Bottom Bar Assembly:

The bottom bar assembly is attached to the lower edge of the fabric, and acts to keep the fabric hanging vertical and taut when the curtain is in the lowered position, minimising deflection due to air currents. Bottom bar assemblies are tested up to 10k/m.

#### Control System:

The smoke curtains will be capable of operation as an integrated part of the Smoke Control and Fire Management System, with emergency power units complete with battery back up and alarm interface panels.



The system shall be fully protected and fail-safe by 'Gravity', meeting the requirements of ASB3 (*moving to the fire operational position in a controlled manner when all consumable primary and auxiliary power sources are removed, in the event the wiring or system corruption, or any combination thereof*) and thereby avoiding the need for fire rated cabling.

System shall drive down and drive up with mains power available, and in the event of mains power failure, shall be capable of operating for a specified number of operating cycles under its own dedicated emergency power supply, or in the event of mains power failure, the system shall remain retracted using its own dedicated battery back up power supply for a predetermined period (usually 30 minutes).

If signalled to descend during this period the barrier will move to its fire operational position. At the end of the predetermined time delay the barrier must descend under fail-safe by 'Gravity' with a controlled and adjustable rate of descent. This safety feature is essential to avoid dangerous guillotine/free-fall descent.

Synchronized velocities within the range of 0.06m/s to 0.30m/s. Smoke barriers (curtains) which are located in critical areas of the project, eg. escape routes, entrances/exits to escalators, stairways, etc., shall have site specific adjustable and synchronized velocities within the range of 0.06 m/s to 0.15m/s. All speeds controls must show appropriate testing by a notified body and must be site adjustable without altering bottom bar mass.

TSMU (optional):

Complete fire barrier (curtain) system shall have a fully addressable, local and remote monitoring facility, and must show that barriers (curtains) have physically descended and not just been signalled to descend.

Optional Extras:

Split drops delay:

Partial descent to predetermined level to permit preliminary escape and initial smoke containment. After delay barrier (curtain) descends to full fire operational position.

Voice warning:

Audio and/or spoken multi message facility.

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 (curtain) deployment line.

Visual alert system:

Standard localized flashing light.

Emergency retract:

Push button retract facility for escape and emergency service access.