Guardian Doors – SD60 Smoke Curtain

Description

SD60 is an electrically operated automatic smoke barrier, to be used to form a continuous barrier against smoke produced in a fire.

Approved standards

BS 7346: Part 3: 1990
BS 476: Part 6: 1989
BS 476: Part 22: 1987
EN 12101-1
UL 10 C
BS EN 1634 – 1:2000
BS EN 13501-2: 2007 classified E60

Product performance

Complete product tested to (BS) EN12101-1:2005 and BS7346: Part 3, and achieved a rating of DA (600°C, above 120 minutes) and isSB 1 and 3 classified.

Designed to operate for 2000 cycles at normal ambient temperatures in the range of 0°C to 60°C and to withstand hot air and smoke at temperatures up to 600°C for over 120 minutes once only.

The fabric has a class 1 surface spread of flame when tested to BS 476: Part 7 and a fire propagation index I =1.4 when tested to BS 476: Part 6. It is therefore rated Class 0 to the UK Building Regulations Approved Document B 1991.

.**Online Information:** **http://www.guardiandoors.net/products/smoke-and-fire-curtains/smoke-curtains**

General Description

The curtain head box is manufactured from 1.2 mm galvanised steel, the enclosure is rated at the same temperature as the curtain fabric. Removable cover plates are incorporated to allow access to the curtain rollers. Standard head box sizes are 150mm x 150mm for single rollers (maximum width 5.5m) and 250mm x 150mm for multiple rollers (over 5.5m wide). Larger head boxes may be required where the curtain drop is in excess of 3 m. A suitably weighted bottom bar is provided to prevent deflection and ensure correct operation under gravity. A polycarbonate extrusion is supplied as standard, this locates into the profile formed in the bottom of the box. The roller is constructed from an octagonal tube, each of which incorporates a 24volt d.c. motor & gearbox and a sealed heavy duty ball bearing assembly. A motor control circuit housed in a steel enclosure is mounted onto the motor end of the head box. The fabric curtain is manufactured from X32K woven glass fibre cloth incorporating a "Panama" weave for increased stability..

Fabric

The fabric has a nominal weight of 540g/m² and is tested to withstand temperatures of up to 1000°C for a period of 60 minutes. The curtain fabric has a "Panama" weave which offers a more even surface and allows a tighter interlacing of the fabric edges. The tensile strength of Panama weave fabric is 10% greater than other fabrics due to the constant thread tension. The extra strength helps the curtain to keep it's shape whilst retracting onto the roller

Control System

The system must be proven to fail safe to the operational position on total loss of primary and auxiliary power. Under normal operating conditions the curtains would be held in the retracted position via the motors operating at low voltage. The manufacturer must be able to confirm that the motor windings used are suitable for this type of operation. Upon activation of the fire alarm the control panel will remove the supply voltage and the curtain will descend under the power of gravity in a controlled

manner. A dynamic braking system housed in the motor control circuit controls the speed of descent of the curtain, this is electronically synchronised on overlapping curtains with a common bottom bar.

To retract the curtain the control panel supplies 24v to the motor control circuits and the motors drive the curtains to the upper position. As the bottom bar or stopping bar hits the curtain head box a current limiting circuit steps back the voltage and current and holds the bottom bar in the retracted position. The system must have the facility to allow the position of the bottom bar to be reset from the control panel to overcome the problem of the bottom bar "creeping" down. Limit switches are not to be used to control the upper position of the curtain.

Should the mains power fail to the group control panel the supply is automatically switched to the integral standby battery. The curtain remains in the retracted position for 1 hour (fully loaded system). The curtain will remain fully operational until the battery low voltage cut off facility reads a voltage of 21v, the curtains will then safely descend under the power of gravity to the operational position.

Optional extras:

Split drop delay: An optional braking system is available to allow a two stage descent during gravity deployment. Partial descent to a predetermined level to permit preliminary escape and initial smoke containment, after delay the barrier descends to full operational position.

Voice warning: Audio 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 drop line.

Visual alert system: Standard localized light or strobe light.

Emergency retract: Hold on retract facility for multi escape and emergency service access.

Walk through escape: Passage through the barrier.

Monitoring: Monitoring relays can be installed in the group control panel to provide BMS contacts for mains failure and curtain zone deployment. Monitoring relays can be installed in the motor control circuits to provide BMS contacts for individual curtain deployment.

Manufacturing

All equipment will be manufactured and pre-assembled to approved drawings.

Consult with Guardian Industrial Doors Ltd technical literature for details. Guardian Doors can also provide a design and specification advisory service and it is recommended that they are consulted early in the design process.

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