

## Example

SmokeMaster SM 5 automatic smoke curtain

Type: SM5/2/SI/G/2750/3140/0/1/X/K/X/Z/D120/PS/C

Electrically operated automatic smoke curtain designed to provide a continuous barrier against smoke produced in a fire. The smoke curtain comprises a flexible heat resistant fabric which is impervious to smoke and hot gases, wound around a circular tube. Upon receiving a signal from the fire detection or on loss of power the curtain automatically unwinds.

It unwinds in a gravity fail safe manner without needing power (gravity fail safe) SmokeMaster fulfils the requirements of EN12101-1.

The smoke curtain is built up as single system, with the cloth and roller within a galvanized steel headbox. There are no visible fixings from underneath. The roller unit ensures that the curtain is held retracted at ceiling level. In case of fire alarm, the smoke curtain drops controlled by gravity into its working position.

The fabric consists of a glass filament fabric with a flame-retardant polyurethane coating. The embedded Al pigments ensure good heat reflection. Colour: silver grey

Class A2-s1,d0 in accordance with EN13501-1

Standard classification according to Table 1, EN 12101-1

The curtain fabric has to meet functional requirements and so cannot be considered as a decorative substance. If the fabric gets distorted or warped, or there are defects in the coating, these do not affect the fire protective properties.

A bottom bar is attached at the bottom of the fabric to provide ensure that the curtain operates as designed and in order to stabilize the curtain when it is dropped. The spring loaded bottom profile made from extruded aluminium ensures that the unit provides a clean finish in its rolled up position. It can also absorb irregularities of suspended ceiling.

The access panel from the headbox and the bottom bar are completely powder coated to a standard RAL of your choice.

The unit is installed using special brackets either for wall or ceiling mounting.

The design and dimensioning is carried out according to local constraints and the temperature class of the system.

Height to fix: ..... m

Range Centres / .....-.....

### Classification according to EN 12101-1

The classification categories according to Table 1 : D120

Operation : ASB 1

Speed of drop : 0.15 m/sec.

Fire behaviour according to technical approval (AbZ) : Z-56.4211-949

### Technical data

Length [mm] : 2750

Height (curtain drop) [mm] : 3140

Dimensions (WxH) 155 x 150

Weight [kg/m]:

Roller unit

Voltage (DC) [V] : 48

Protection class : IP 20

Coating : RAL

## Air Leakage calculation for Automatic Smoke Curtains

According to EN 12101-1, 5.5.3 (see norm in the Intranet)

For functional reasons gaps can be required for the smoke curtain between the construction works and for angled and adjacent curtains. However where smoke barriers are not fixed in a straight line the designer can make allowances for increased leakage within his calculations hence the following gaps are permitted between the barriers and the adjacent construction works:

- up to 20mm where the curtain depth is no more than 2m.
- Up to 40mm where the curtain depth is between 2-6m.
- Up to 60mm where the curtain depth is more than 6m.

The calculation method below provides the air leakage through one unit. The results are expressed as a percentage of the overall curtain area.

### Note:

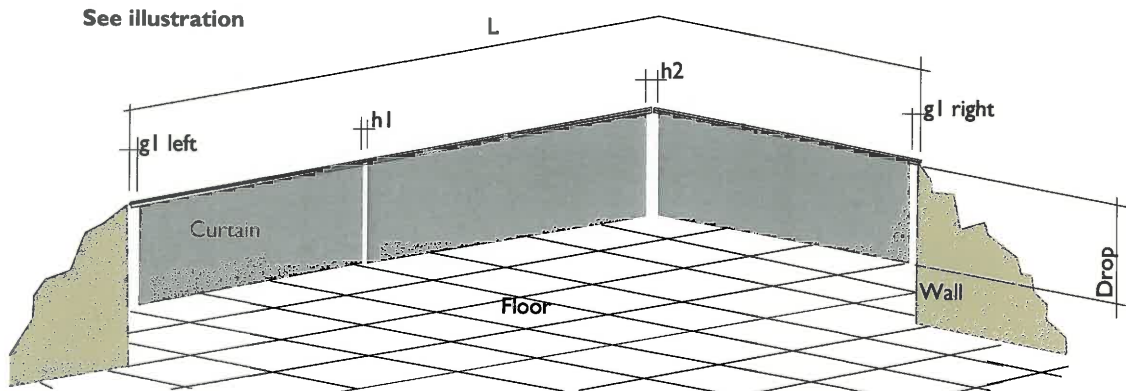
In the planning phase, the maximum permissible gaps are used as basis.

Then they are checked against the actual gaps once the curtain has been installed.

20 mm between the curtain and the construction works  $g1$  (edger)

20 mm between straight curtains  $h1$

20 mm between curtains which are set at an angle  $h2$



Range	Room I	Centres 1-3 / A-B	Unit	Item I
		:		
Curtain length L		=	15000 mm	
Drop		=	2,000 mm	
Area of curtain $A_{curtain}$		=	30,000 m <sup>2</sup>	
1x Gap $g1$ right edge		=	18 mm	
1x Gap $g1$ left edge		=	17 mm	
1x gap curtain overlap $h1$		=	5 mm	
1x gap curtain corner $h2$		=	20 mm	
Area $A_{total}$		=	0.120 m <sup>2</sup>	
$A_{sp} =$	$\frac{0.12 \times 100}{30.00}$	=	0.40 % of Smoke Curtain area	