Product Specifications of Automatic & Static Curtains.

Manufacture
All manufacturing processes and quality control procedures meet the full requirements of BS EN ISO 9001 and all **smoke curtain** products are designed and manufactured in full compliance with the appropriate BS regulations.

Materials
The fabric qualities vary according to the end use and purpose for both smoke and **fire curtains.** Automatic and static fire curtains will generally use 1 - 4 hour rated curtain material whilst **smoke curtains** may use only 30 min or 1 hour rated curtain material. The 1 hour rated curtain is generally used in **smoke curtains**.

60 minute rated curtain material. Generally used for **smoke curtains** and are manufactured from 410 - 420 grams per square metre with a micronised aluminium polymer coating on each side of the fabric. This fabric is manufactured and tested to withstand 1000 degrees Celsius for a period of 60 minutes. The seams, top and bottom hems are closed with the use of stainless steel thread.
4 hour fire rated fabrics are manufactured from 640 - 660 grams per square metre stainless steel, wire reinforced, woven glass fibre coated on each side with silver polyurethane. Rated to 1000 degrees Celsius for a period of 4 hours. Side seams, top and bottom hems are also sewn using stainless steel thread. Specific details may vary between one manufacturer and another.

All **fire curtains** will have a pair of steel side guides which retain the fabric from blowing open and the flames / smoke travelling past the fire barrier. The fabric starts to react to the varying pressures, positive or negative, and the curtain acts as a sail. Hence the requirements of the side guides with a specific curtain retention system to stop the curtain coming out of the guides. On wider applications then a system of off set rollers and over-lapping curtains will be used to ensure the retention of flames behind the curtain, this will still conform to the standards achieved with a single curtain in the fire rating tests.

The coil of the fire curtain is protected by means of a roll formed mild steel hood. There would generally be a removable bottom plate on the underneath of the hood for maintenance purposes.

Static curtains

Using specific fabrics to suit the requirements of the application. The fixings to secure the curtain to the building structure may vary from self tapping screws through galvanised mild steel angle to steel clips that are specifically designed to retain the curtain in place. Bottom pocket hems are used to contain the steel rod which aids the stability of the curtain.

Automatic fire curtains

Operation

Single roller systems, up to 6 metres wide, have been certified to BS: 476 Part 22 and have a rating of 270 minutes at 1000 degrees Celsius.
Overlapping rollers have a rating of 180 minutes at 1000 degrees Celsius.
Fire curtains can provide 30 metres of continuous fire containment in single spans using overlapping curtains. Curtains can also be 6 metres deep. No intermediate supports, columns or centre posts are needed.
Fire curtains can drop in stages (split drop delay) to provide progressive smoke containment. They can therefore be used as automatic smoke curtains and are fully tested to BS 7346 Part 3 1990 and to the latest BS requirements that systems must fall to their fire operational position in a safe and controlled manner even in the event of a Total Power failure. Split drop delay functions can provide temporary means of escape and are therefore a critical life safety requirement.

Fire curtains require side guides to provide a seal between the fabric and the structure of the building. A fire will cause either positive or negative pressures, these pressures can cause a curtain to act like a sail and pull the curtain fabric out of the side guides. Therefore a fabric retaining system is used to prevent this occurring.

Control Panels (C P). These are necessary to control the motors and co-ordinate all functions of the curtain and to relate to the fire / smoke alarm system.
In normal operation the C P provide a 24v supply to the curtain motors, the curtains will be in the retracted mode. Should smoke be detected, the fire alarm contact in the C P will be opened by the fire alarm control system, the C P will remove the 24v supply to the curtain motors and the curtains will descend under the power of gravity in a controlled manner. As soon as the fire alarm system is reset the C P will reinstate the 24v supply to the curtain motors and the curtains will retract. Each C P will be supplied with a 24v battery, this will enable full control of the system should the mains power fail.

Smoke curtains.

The fabric used for 1 hour fire rated curtains is generally used for smoke curtains. They can be either static or automatically controlled using the tubular motor system with control panels and similar motor configurations as used with the fire curtains.
The smoke curtains may not be installed with side guides as there is a tolerance allowed around the edges through which smoke may seep. The over-lapping of one motorised curtain against another is used to cover larger expanses. The curtain is retained together with the over-lapping and also that of a steel rod fed through the bottom pocket.