

Automatic Fire Curtains

30 years of experience in supplying and installing fire and smoke curtains.



Designed, tested and fully certified to the latest UL, BS and EN Standards.

*Automatic fire curtains protect against the threat of fire, smoke and hot gases in the event of a fire, and are a lightweight and compact solution to traditional fire rated roller shutters. These automatic barriers **save lives and protect property** in addition to enabling open air designs where otherwise a permanent fire rated partition would be required.*





Fire curtains are used in several scenarios (See Page 5). For instance, to provide complete fire compartmentalization in escape routes...



...to fully compartmentalize escalator zones



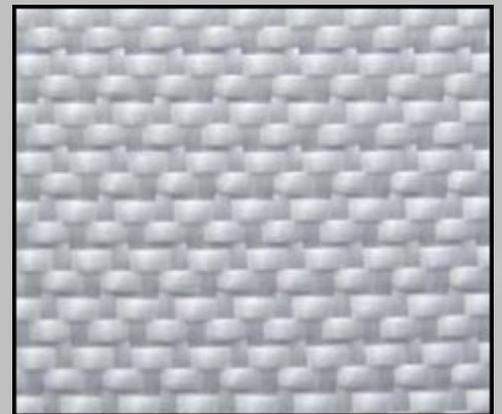
...to cover elevators openings



...to replace heavy / inconvenient fire doors

FEATURES

- 1 hour and 4 hours fire rated models available
- Multiple overlapped curtains for larger widths; Intelligent controls and conjoined bottom bar ensure synchronous descent.
- True gravity fail safe system; the curtain will descend to operational position even under complete power failure.
- Cost effective, current sensing motor drive system eradicates the need for troublesome limit switches.
- Smaller headroom with headbox sizes from 180mm x 180mm.
- Tested to BS476 part 22, BS EN 1634 Part 1 and 3, UL 10 D & DS.
- “2 in 1” fire and smoke containment
- 70 % radiant heat reduction when compared with fire shutters.
- Easy access and escape (egress) through fire curtain.
- Neat and attractive ceiling interfaces.
- Split drop descent facility



4 HOUR fire rated fabric: High tensile weave with interwoven stainless steel. The fabric weight is approximately 660 g/m².

TEMPERATURE RATING
270 mins @ 1000 degrees C

MATERIAL

Woven glass fibres, reinforced with stainless steel wires with a silver polyurethane coating for flexibility and lower radiated heat; sewn with stainless steel thread.

NOTE: A 1 hour fire rated curtain would use the same fabric as a smoke curtain, rated to 60 mins @ 1000 degrees C.

HOW DOES A FIRE CURTAIN OPERATE?

How are the curtains stored in normal situations?

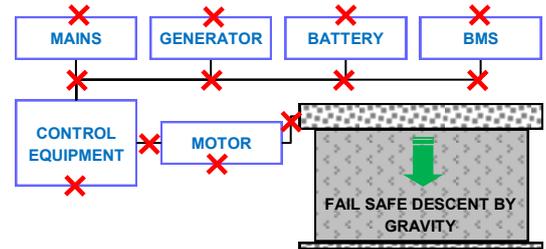
Under normal conditions, the curtain remains retracted in the compact head box installed above the false ceiling. It is held in place by an extra low voltage supply with the bottom bar resting against the underside of the headbox or below the box depending on the application.

How are the curtains activated?

- 1) Via the fire alarm signal
- 2) Via other detection systems like heat / smoke detectors
- 3) During a power outage (a back up battery will hold the curtain in position for 60 minutes before it descends)
- 4) Turning the test key switch for regular safety testing

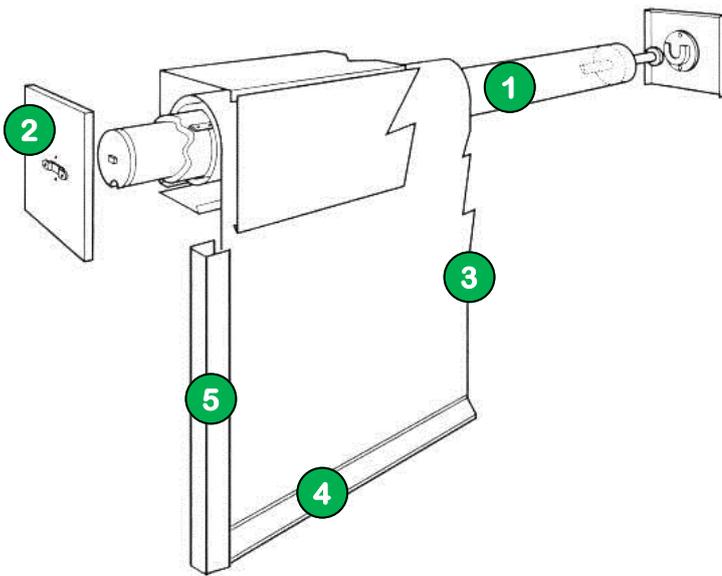
The group control panel (GCP) removes the power supply to the motor control circuit (MCC) and the extra low voltage to the motor is suspended. Since the brake has been released, the weight of the bottom bar pulls the curtain down to its operational position. When the signal is reset, the GCP restores power to the MCC which retracts the curtain up and back to its normal position.

CONTROLLED GRAVITY FAIL SAFE DESCENT



Our Gravity Fail Safe ensures that under any scenario, the curtain will descend by gravity. The curtain does not fall like a guillotine but descends at a controlled and constant. This is because the voltage generated by the rotating motor feeds the electronic speed monitoring system which ensures that the speed is within safe limits as set by International Standards.

BASIC CONSTRUCTION OF A FIRE CURTAIN



1) ROLLER

The fire curtain fabric is wound onto the roller which remains completely enclosed by the head box.

2) HEADBOX

The rollers and motors come fully enclosed in a small head box profile (made from 1.2mm thick steel) starting from 180mm x 180mm, making them compact and convenient.

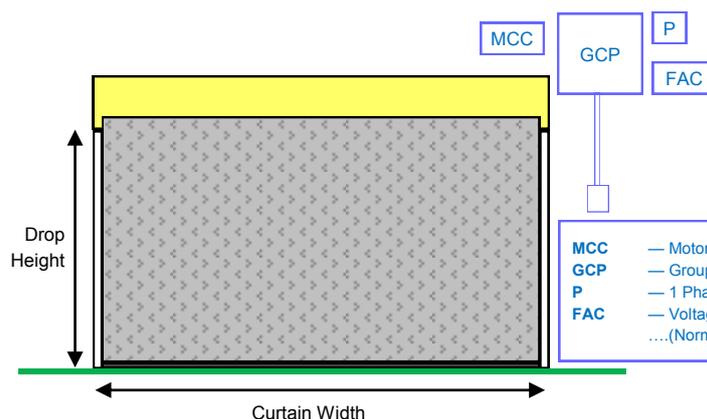
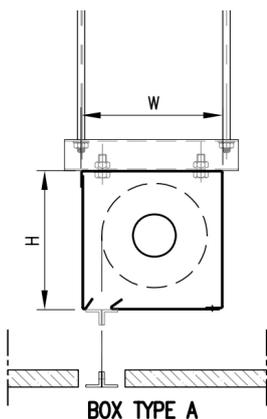
3) FABRIC

Weighing approx. 660g/m², this woven glass fibre cloth is reinforced with stainless steel and has excellent fire resistance and low irradiation of heat.

4) BOTTOM BAR

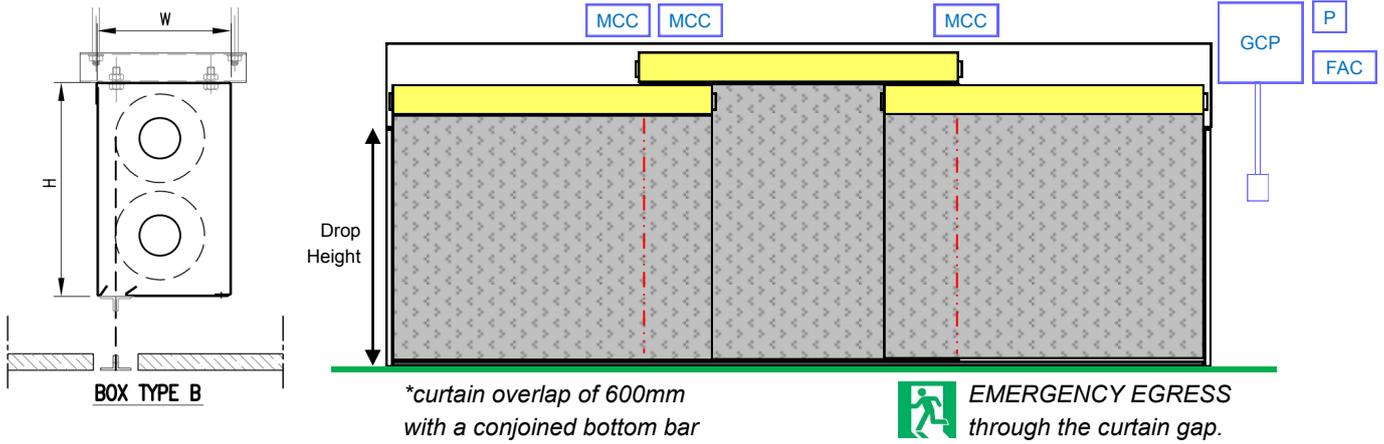
Mild steel angles suitably designed to form a complete seal.

SINGLE ROLLER ASSEMBLY



Maximum recommended span width for a single roller is 6m. Larger widths use multiple roller assemblies with overlapped curtains and a conjoined bottom bar.

MULTIPLE ROLLER ASSEMBLIES

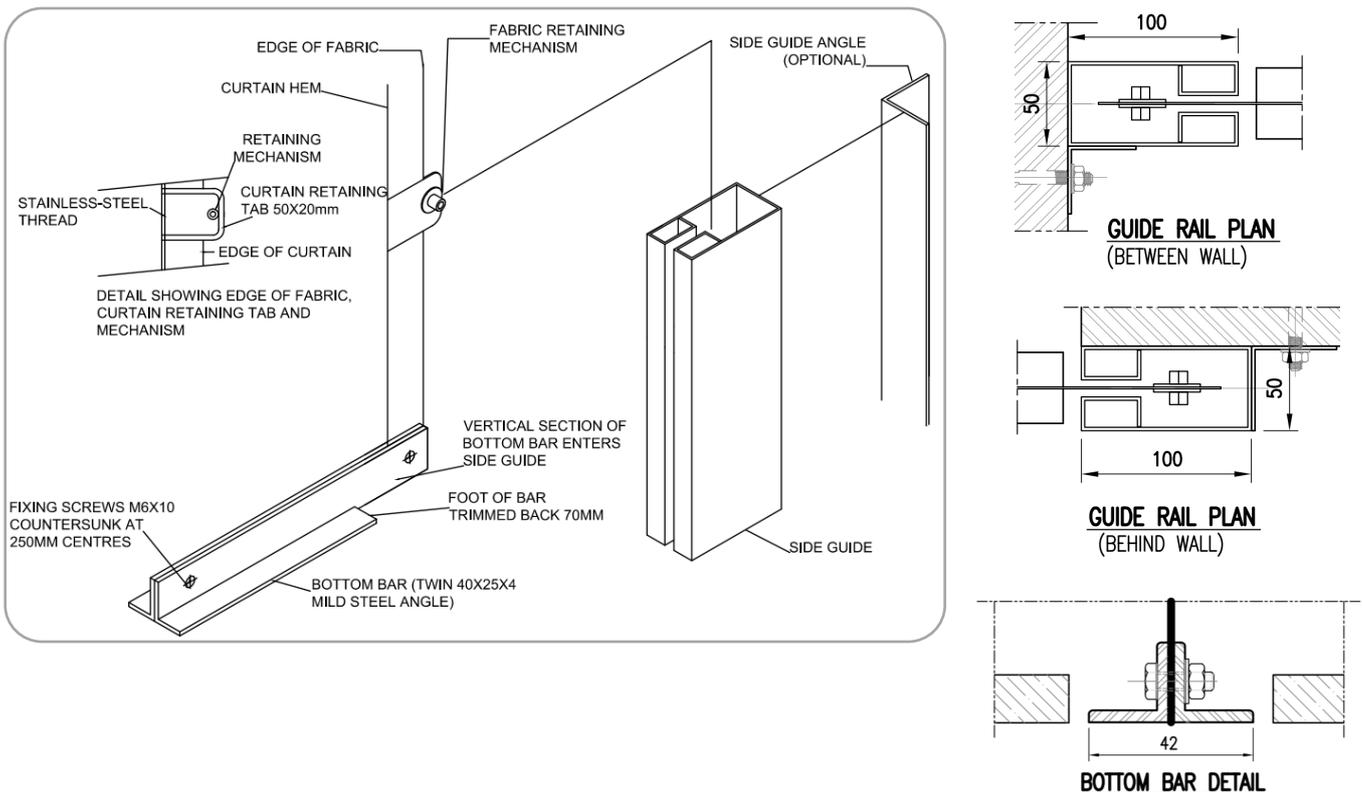


STANDARD HEAD BOX SIZES

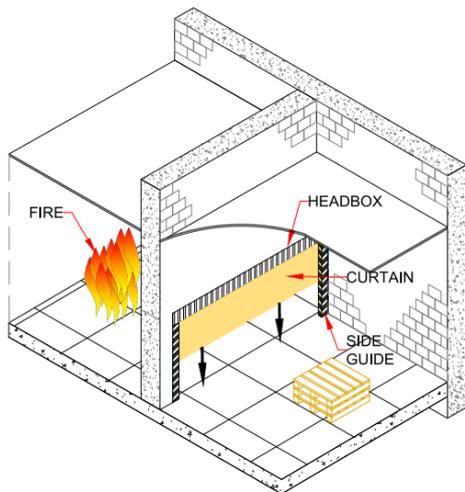
all (W x H)	Single Roller	Multiple Roller
CURTAIN DROP	BOX TYPE A	BOX TYPE B
Up to 3m	180mm x 180mm	180mm x 290mm
From 3m to 8m	210mm x 210mm	210mm x 390mm
From 8m to 12m	250mm x 250mm	250mm x 440mm
From 12m to 20m	300mm x 300mm	300mm x 540mm

The size and compact nature of the head box is a great benefit to specifying and using our curtains. Our curtains come pre-calibrated specifically to the project application and thus installation of the curtain is simple, with no extensive adjustment required on site.

SIDE GUIDE AND BOTTOM BAR

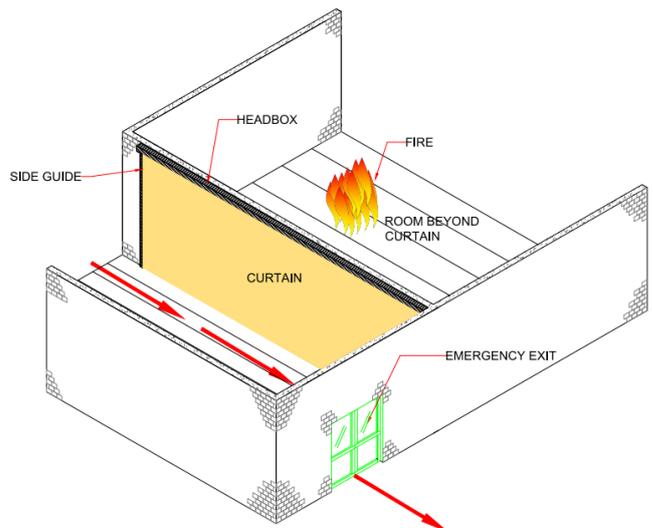


SOME SCENARIOS WHERE FIRE CURTAINS ARE USED



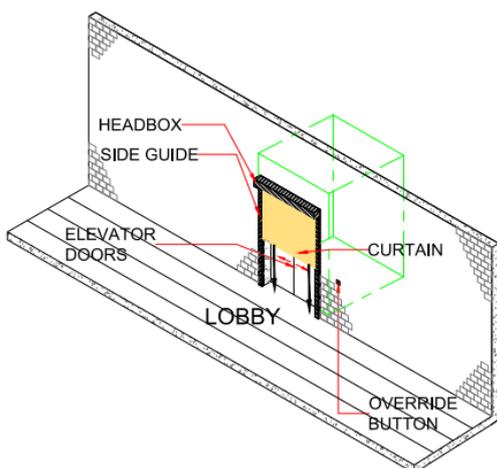
FIRE COMPARTMENTALIZATION

To serve as a barrier for fire compartmentalization, the installed product needs to have fire resistance/ integrity for the specified time *and* reduce the irradiation of heat (transfer of heat through the material). Our fire curtains provide the highest levels of protection and is beneficial over traditional fire shutter use owing to 70% lower heat radiation and compact enclosed construction.



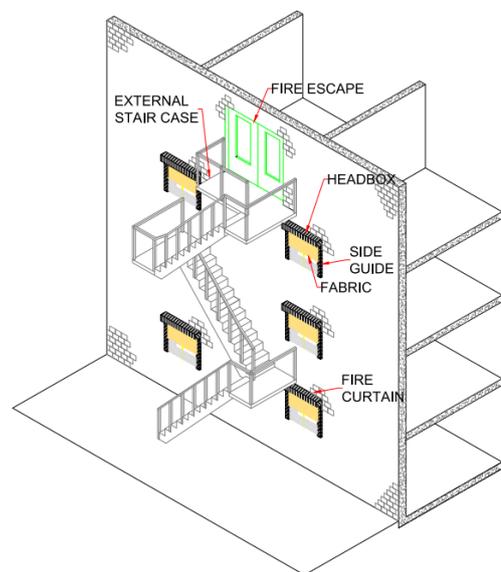
PROTECTING ROUTES OF ESCAPE

When considering the placement and provision of a protected means of escape, fire and smoke are paramount factors that need to be addressed. However, a permanent brick wall or fire rated partition might not suit the building design and traditional fire shutters might be too bulky. Our fire curtains with their compact headbox size and 70% less radiation that steel shutters are ideal solutions when it comes to creating an automatic barrier between zones with reduced temperature and prevention of smoke egress.



IN FRONT OF ELEVATOR DOORS

Elevator shafts are a permanent compartment breach with the potential to spread flames and smoke vertically through a building very rapidly. Our smoke and fire curtains can be designed as a certified and recognized 'smoke seal' that can be discreetly installed in front of elevator doors, thus rendering the curtain invisible when retracted. Once deployed it permits a greatly reduced level of smoke leakage falling within International Standard requirements.



EXTERNAL ROUTES OF ESCAPE

Where buildings make use of external staircases running down a building to allow escape from each floor, a fire on the lower floors can compromise this route of escape. A curtain with an IP rating can be installed along weak points of the escape route providing protection to the stairs from smoke, irradiance of heat and high temperatures and naked flames.

SPECIFICATION

The **Automatic Fire Curtain** consists of fire resistant fabric curtain with stainless steel reinforced for impact resistance and is mounted on a steel roller and powered by an internal, electric, tubular geared motor. All working parts are totally enclosed and protected within the steel roller. The complete system is tested for true fire resistance, and controlled gravity fail-safe on total power failure which is not reliant on secondary power supply.

Certifications & Documentation

Ferco's Fire Curtain has full testing and certification to BS476 Part 22 1987, Clause 8, BS 7346 Part 3 1990, BS EN 1634-1, 1634-3, UL 10 D & DS.

Operation

Under normal conditions the curtain is retracted in the head box and is held in position by an extra low voltage supply from the semi conductor regulator in the motor control circuit (MCC). The bottom bar will be resting against the underside of the box or below the box if a stopping bar is installed, the stopping bar will then rest against the box. In the event of a fire condition or operation of the test key switch, the group control panel removes the power to the MCC's and the extra low voltage supply to the motor is isolated. The curtain descends by using the weight of the bottom bar to rotate the tube and deploy the fabric at a controlled rate.

The Fire Curtain operates with mains power and is also operable with emergency power source. If both mains and emergency power fail, the system will descend, under gravity with a controlled rate of descent after a time delay of 60 minutes, as a safety feature to avoid dangerous guillotine/fall descent. The system is operated by alarm / control signal and / or specified fail-safe functions

Construction

The steel roller. Complete with internal tubular motor, curtain, bottom bar and all associated fittings, is fully enclosed within a 1.2mm galvanized mild steel box. Motor contains the gearbox, braking system and drive mechanism. Curtains are contained within 1.2mm galvanized mild steel boxes whose end plates are brackets are made of minimum 2mm galvanized mild steel.

Multiple units will have rollers overlapping (600mm) one over the other. The fabric on the upper roller will descend immediately adjacent to the fabric on the lower roller, and both fabrics would be linked with a conjoined bottom bar. All operating speeds are fully adjustable to ensure synchronization of units with conjoined bottom bar.

The bottom bar consists of two L shaped mild steel angles forming a T-section.

Controls

Ferco's Fire Curtain operates through Group Control Panel (GCP) located adjacent to the units with the Main Fire Alarm Panel (MFAP), Motor Control Panel/s (MCP) located adjacent to motors, have appropriate access panels. The system is fully protected and failsafe to avoid fire rated cabling. In case of temporary power interruption, curtain will be in raised position for a time duration of 60 minutes, after which the curtain will descend if power is not returned. GCP has audio and visual power failure warning system as an optional which is operable with both mains and emergency power. Optional facility is available for partial descent to predetermined position – delay- followed by full descent (applicable for full power failure).

Fabric

Woven with glass fibers with reinforced stainless steel wires with a silver polyurethane; tested as part of the complete assembly with OVERLAPPED and CONJOINED curtains in the orientation. The fabric achieves 270 minute fire resistance at 1000 C according to the time temperature curve of BS476 Part 20 1987, and weighs about 660 grams / m².

Fabric meets the requirements for Fire Propagation of BS476 Part 6 1989 and has Nil spread of Flame, achieving Class 1 according to BS476 part 7 1987.

M & E Requirements

Voltage free, normally closed Fire Alarm signal, 230V, single phase, 50Hz, 13A power supply

Optional Features

- >Audio / visual alarms
- >Monitoring the fire curtain through a BMS system or remotely with dedicated monitors.
- >Powder-coated bottom bar and guide rails.
- >Emergency Retract Buttons
- >Oversize certification
- >2 Stage Descent Facility
- >Fire alarm override facility



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