

AEROSAFE FIRE CURTAINS

HFC-04



AEROSAFE

FIRE CURTAINS

INDEX

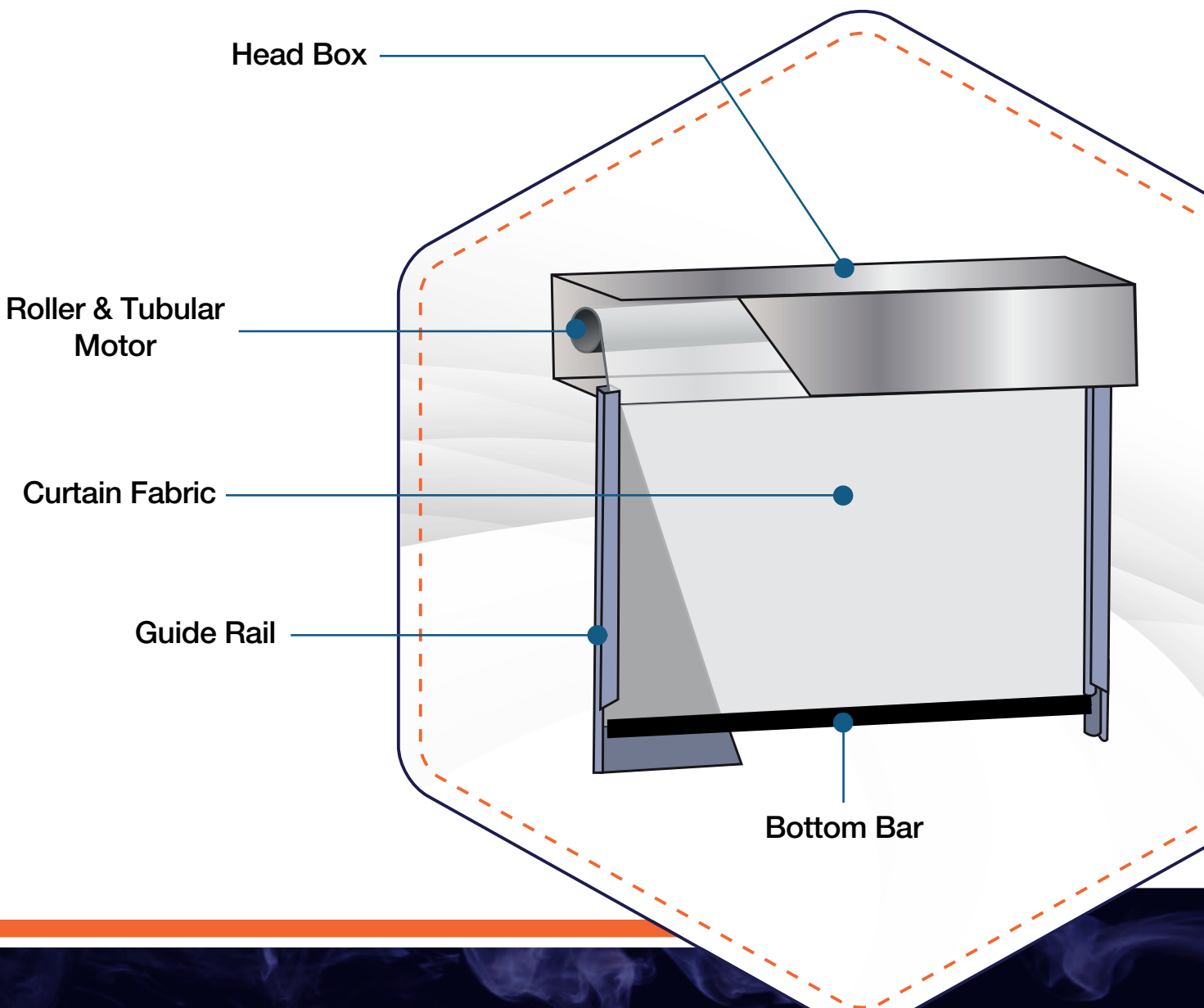
Introduction	04
Components	05 - 07
Roller Assembly	08
Electronic Control Systems	09 - 10
Aerosafe Control Systems Operation	11
Main Features & Fire Curtains Specification	12
Applications	13

INTRODUCTION

Aerosafe Fire Curtains have a basic appearance, but they are extremely effective in containing fires. They act as a passive barrier to keep flames from spreading, reducing damage, and assisting in the creation of safe zones for evacuation.

Large vertical openings, expansive atriums, staircases, and elevators are all vulnerable to a rush of flames and smoke, either because of their openness or because they can form airflow channels feeding oxygen to fire which leads to more flame & smoke.

Firefighters will have an easier time safely accessing the building and controlling the fire if these vertical openings are blocked off and the open regions are compartmentalized. Furthermore, the better contained a fire is, the safer the evacuation.



COMPONENTS

Head Box

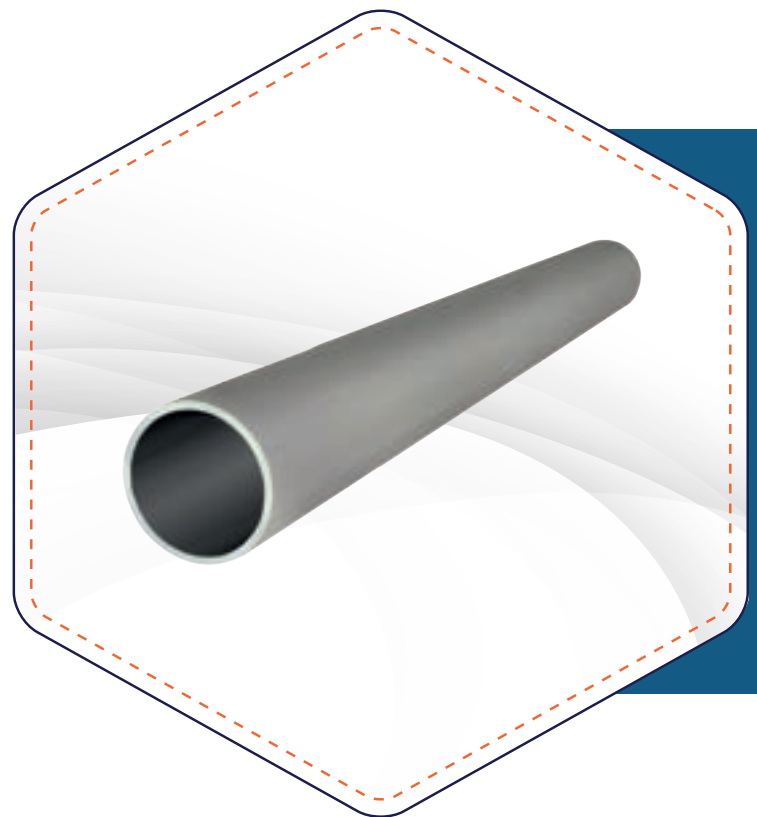
The steel head box houses the roller, fabric and motor within the casing creating a small compact package that is above the ceiling and not visible.

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 190 mm x 190 mm for single rollers (maximum width 5.0 m) and 210 mm x 390 mm for multiple rollers (over 5.0 m wide). Larger head boxes may be required where the curtain drop is in excess of 3 m.

Over/under configuration for long runs of overlapping curtains. It can be powder coated to any RAL color.

Aerosafe Roller

Aerosafe Roller drives a 76 mm steel roller tube to retract and deploy the fabric from normal position in the head box to its operational position. Factory assembled and fitted inside roller barrel.



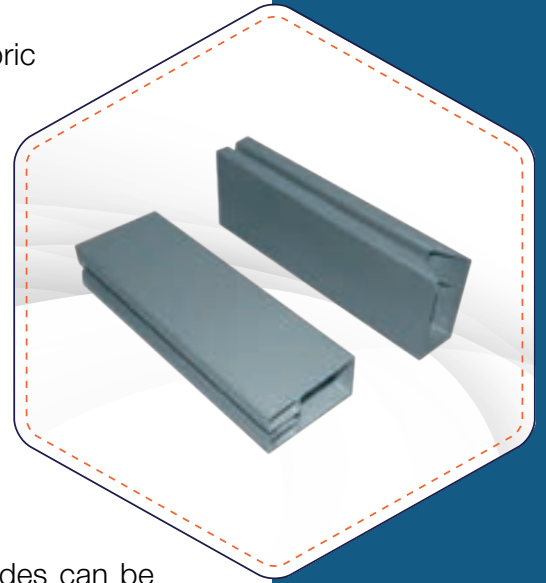
Guide Rail

During deployment, steel side guides prevent derailment of the fabric during operation ensuring integrity of the system when faced by positive or negative pressures of a real fire.

100 mm x 50 mm x 2 mm rolled steel channel. Mandatory on fire curtains. Tested and certified to form an integral part of the barrier.

Our fire curtain steel side guides can be powder coated to blend in with the surrounding wall. The stitched fabric inserted into the guide rail is provided with retainer tabs for added strength.

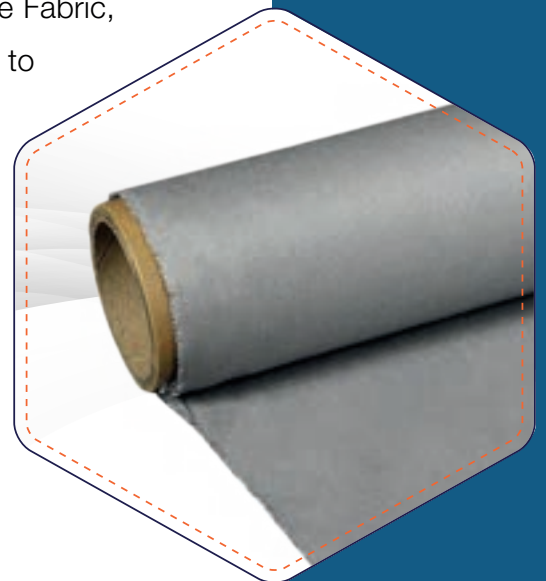
Designed to be slim and as unobtrusive as possible, the side guides can be fixed to the building structure in many ways as required.



Curtain Fabric

An important component of a fire curtain system is the fabric. The fabric is designed to withstand heat and fire, including temperatures up to 1000 °C.

When tested in accordance with BS EN 1634-1 using the Aerosafe Fabric, the complete assembly achieved an integrity performance of up to 240 minutes. The fabric is woven glass fiber reinforced with stainless steel wire and coated with a fire retardant polyurethane including aluminum pigment on one side. The finished product is sewn with stainless steel reinforced thread at the hem and seam locations ensuring a factory produced, code compliant product.



Fabric Properties Table

Properties	
Integrity duration	Up to 240 minutes
Thickness	0.65 ±5 mm
Stainless steel wire reinforced	Yes
Coated side	One side
Coating	Fire retardant polyurethane with aluminum pigment
Thread	Stainless steel
Standard color	Gray

Bottom Bar

The Aerosafe Fire Curtain bottom bar provides weight and stability to the system ensuring a gravity fail safe deployment and to stabilize the curtain during descent.

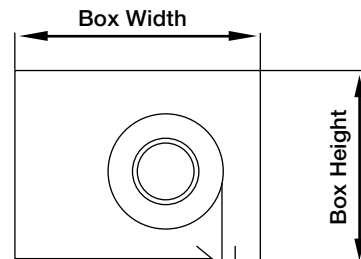
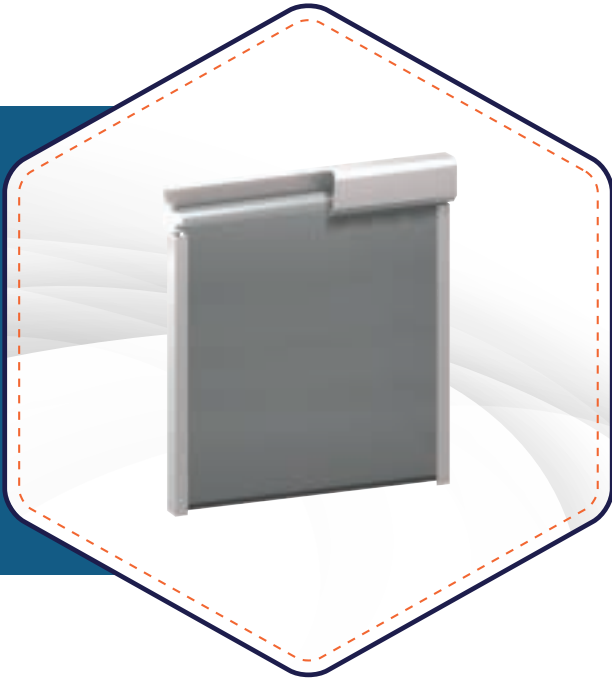
A minimum of 4 kg weight per standard motor is required to ensure that the curtain deploys properly.



ROLLER ASSEMBLY

Single Roller

Single Roller Assembly can accommodate up to 5 m width curtain.

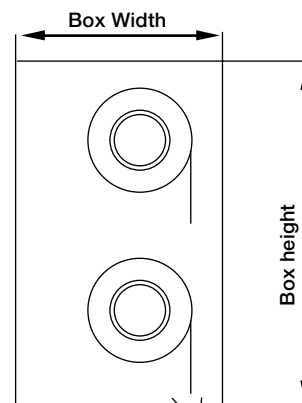


Curtain Drop	Single Roller Box	
	Width (mm)	Height (mm)
Upto 3 m	190	190
3 m to 6 m	210	210

Multiple Roller

To achieve a virtually unlimited width without the need for intermediate guide rails, Multiple Rollers are arranged in an 'over-under' arrangement and neatly encased within the head box.

Multiple Rollers utilize the use of a minimum of 500 mm fabric overlap arrangement which removes the need for intermediate side guides and minimizes the potential for roller bounce.



Curtain Drop	Multiple Roller Box	
	Width (mm)	Height (mm)
Upto 3 m	190	350
3 m to 5 m	210	390

ELECTRONIC CONTROL SYSTEMS

Aerosafe Automatic Electronic Control Systems

The system must provide for the fail safe movement of the curtain 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. 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.

Should the main 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 up to 2 hours. 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.

Motor Control Panel (MCP)

- Run timer (40/80 seconds).
- Controls curtain motor gravity fail safe descent.
- Current controlled curtain ascent with no motor limit switches.
- Option for 2 stage descent functionality with motor brake fitted.
- Separate Individual Override Interface (IOI) for emergency exit on a single curtain.



Group Control Panel (GCP)

Aerosafe Group Control Panel consists of test key switch, 2 x 12v 7ah back-up batteries, LED status indicators.

Manual override for all curtains connected to a single GCP.



GCP Backup Batteries

2 x 12v 7ah back-up batteries. Used to hold the curtains up temporarily in the event of a main power failure. Continuously recharged. Typically up to 30 mins operation when no main power. Operational time will depend on number of motors and condition of the battery.

Group Control Panel (GCP) - Options

- Manual override facility
- Delayed descent/ascent
- Interlinking of multiple GCPs



Aerosafe Tubular Motor

The Aerosafe Tubular Motor is a permanent magnet DC electrical motor. When the curtains are retracted, the Aerosafe Motor Control Panel (MCP) routes a 24v DC low voltage supply to the motor which keeps it in the retracted position.

When the fire alarm signal is triggered, the low voltage supply to the MCP is removed which in turn deploys the curtains to their fire operational position under the power of gravity.

Based on weight of the curtain, 20W and 40W Nominal Power are selected.

AEROSAFE CONTROL SYSTEMS OPERATION

Operation in a Fire Scenario (Fire Alarm Signal Received)

The Aerosafe Group Control Panel (GCP) is powered by a 230v AC, 3 Amp 50 Hz power supply. A pair of normally-closed, volt-free fire alarm contacts supplies the fire alarm signal when commanded by the Building Management System. In its stored position within the head box, the curtains remain retracted and held in place by a low voltage supply (24v DC) to the curtain motors. Upon receipt of a fire alarm signal, the supply to the motor controller is removed, which releases the curtains. Using Aerosafe's Gravity Fail Safe System, the curtains deploy to the operational position at a controlled rate under the force of gravity. No power source is required for curtain deployment.

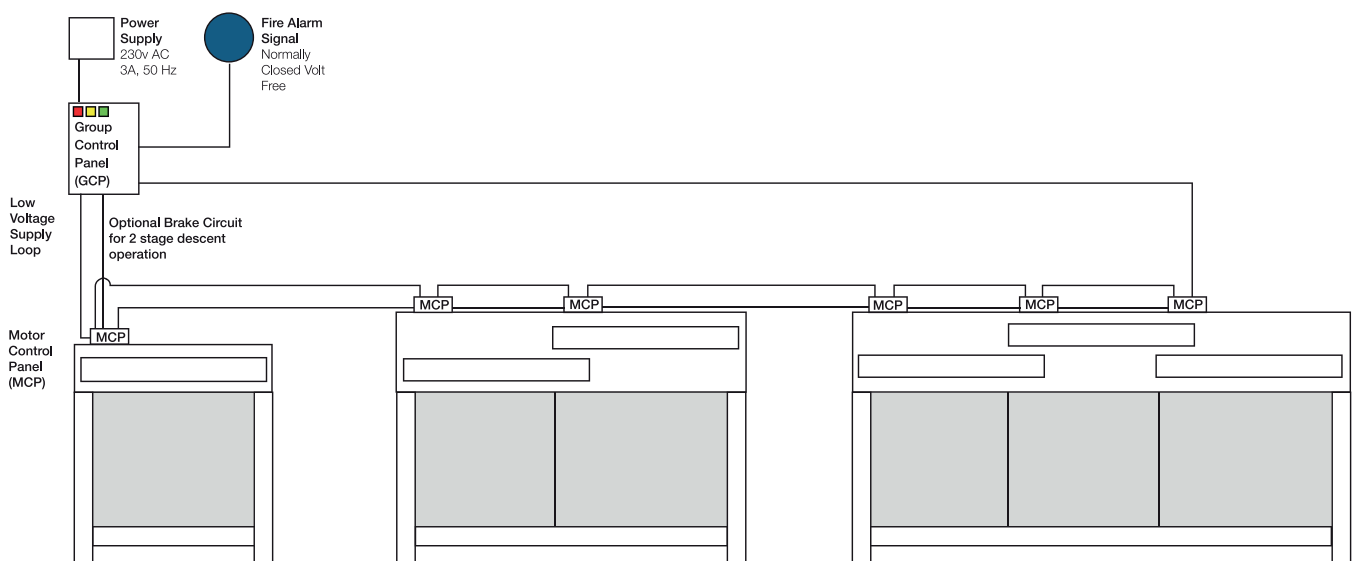
Operation in case of Loss of Power (Non-fire Scenario)

In the event of a mains power failure, each GCP is supplied with a battery back-up system providing up to a minimum of 30 minutes of power to the curtain motors. This prevents unintentional deployment of the curtain in a non-emergency situation. Upon exhausting the battery back-up, the curtain will descend safely under gravity.

One GCP has the ability to control a maximum of 5 no.x 20 Watt motor. If the number of motor exceeds 5, GCP's can be linked together. This avoids the need for each GCP to be supplied with its own fire alarm signal. This set up also ensures synchronous descent of multiple curtains. Should a 2 stage descent be required, a brake is added to the motor which is energised by an additional brake cable.

Optional Features

- Push button emergency override
- Individual curtain override
- 2 stage descent
- Obstruction sensor
- Heat detector
- BMS link facility
- AV facility



MAIN FEATURES

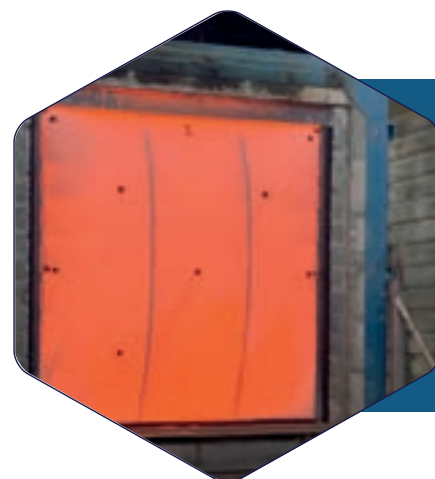
- Economical solution which often replace fixed walls, doors or other barriers.
- Easy to install and cost effective with fast lead time.
- Low Maintenance cost & high durability.
- 100% gravity fail safe descent (will operate without power), individual override operations, audio/visual alarms, emergency retract buttons, smart BMS modules, obstruction sensor and other as per the site requirement with best of R&D.
- Design solution: Bespoke designs to fit all requirements and layouts, allow architectural freedom with space usage.
- Width and drops: Aerosafe Fire Curtains are designed to cover unlimited width.

FIRE CURTAINS SPECIFICATION

Ratings

- **Integrity**

The most common rating requirement is 30, 60, 120, 180, 240 minutes rating. It is defined by the ability of the curtain to prevent or limit the spread of fire for the specified time.



Testing Standards

Aerosafe Automatic Fire Curtains are tested in accordance with standards below:

Aerosafe Automatic Fire Curtains	
Model number	HFC-04 Active Fire Curtain
Testing standards	BS EN 1634 - 1: 2014:- Fire resistance
	Tested in single and multiple barrel orientation
Radiation protection	Up to 90 mins < 15KW/m ²
Compliance	Certifire - third party accreditation
Fire resistance E	240 minutes for fabric

APPLICATIONS

Void Edge Separation (Escalators & Stairs)

Escalators and stairs create gaps between floors. These gaps are critical points that need to be sealed off in the event of a fire to stop the spread of fire from lower to upper levels. By deploying on the upper level, fire curtains create a physical barrier against fire.

The fire curtain will fully encapsulate stairs or escalators to allow open plan designs replacing fire doors and lobbies.



Fire Compartmentalization

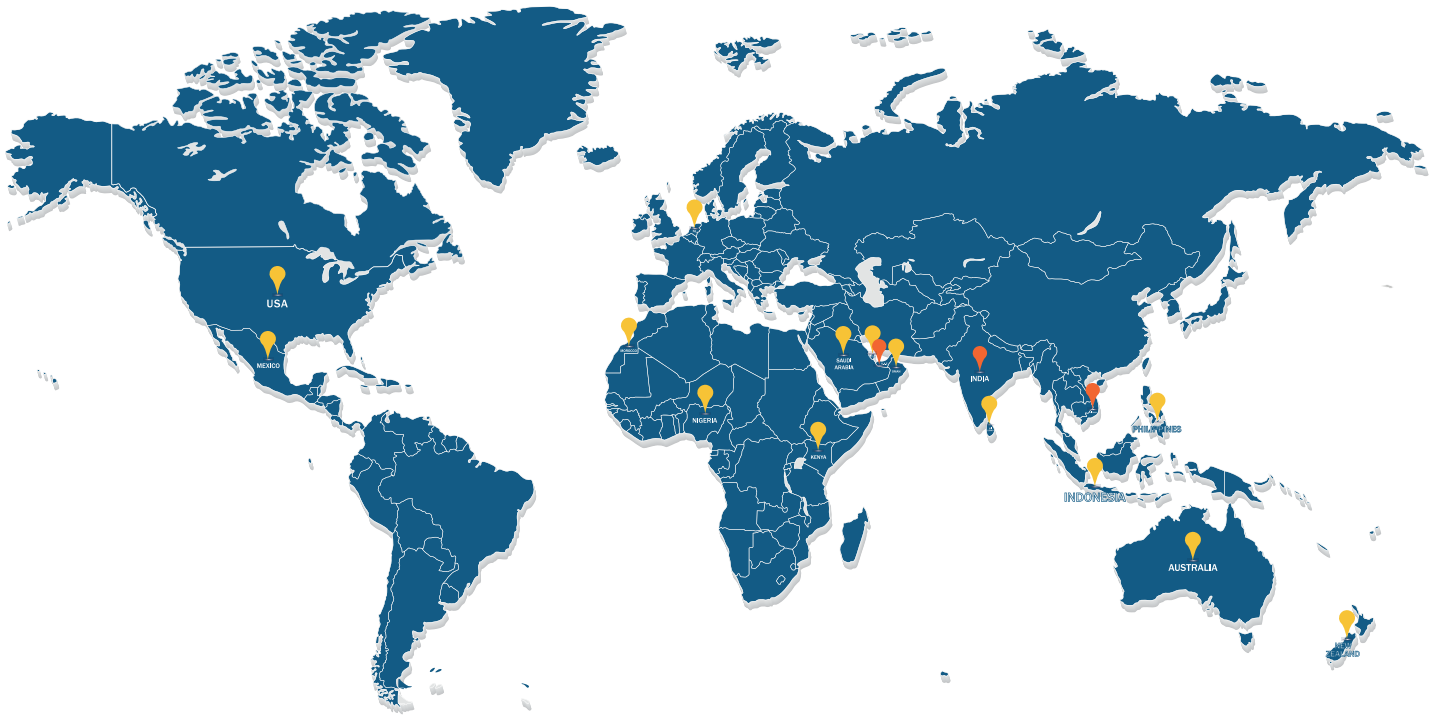
To prevent the spread of fire from one zone to another, fire curtains are a vital element of a fire compartmentalization strategy. On deployment, they create a physical barrier against the spread of fire and control their spread through a building.

Fire Strategy

Aerosafe Automatic Fire Curtains are indispensable to a successful building fire strategy. Atria, lobbies and receptions create large open spaces that can be quickly engulfed in fire as it spreads from lower to upper levels. Spread of fire can be limited by fire curtains.



Global Footprint



 Sales Units  Sales & Manufacturing Units



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