

THE LEADING EDGE IN Smoke & Fire Curtains

- Automatic Smoke Curtains
- Automatic Fire Curtains
- Static Smoke & Fire Curtains
- SHEVS



**Smoke & Fire
Curtains**

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Welcome to BLE Smoke and Fire Curtains

BLE protects millions of people in airports, shopping centres, theatres, businesses, and museums around the world, every day.

We are proud to be the original supplier of highly sophisticated smoke and fire curtains. Our gravity fail-safe smoke and fire curtains have market-leading features and the highest technical specification available, yet offer a cost-effective and flexible solution to fire and smoke control.

Why Choose BLE Smoke and Fire Curtains?

BLE designs, manufactures and installs gravity fail-safe smoke and fire curtains that offer the latest in electronic technology and innovation, making our products the first choice with designers, architects and engineers.

As BLE products are designed to be discreet, robust and simple to operate and maintain, we can find a solution to the most challenging architectural demand. This is why BLE fire and smoke curtains feature in prestigious refurbishments and ground-breaking new buildings across the globe.

All our manufacturing processes and quality control procedures are certified to meet the full requirements of BS EN ISO 9001:1994. Every smoke curtain and fire curtains from BLE is rigorously tested and comply with all relevant BS, EN and UL standards allowing their incorporation in designs worldwide.



Smoke & Fire Curtains



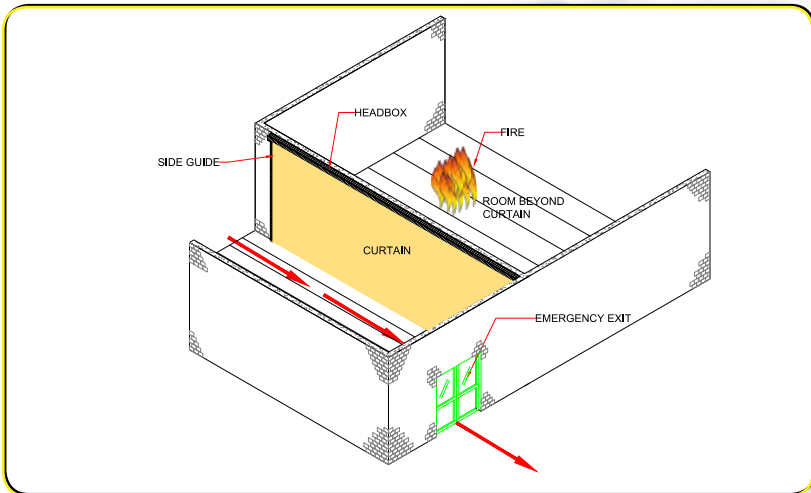
Simple, effective and cost efficient, draft and static smoke and fire curtains from BLE are invaluable for protecting large open buildings from the threat of fire, smoke and hot gases.

An automatic smoke curtain is manufactured to provide an unobtrusive and aesthetically neutral solution to compartmentation issues throughout the most complex of buildings. We are able to create bespoke smoke curtains for even the most complex smoke control system, regardless of what type of building it is protecting or where in the world it is to be installed.

Automatic Fire Curtains are similarly discreet in design and are suitable for use in a multitude of fire scenarios which are explained in detail on pages 4 - 8. Control Systems for our BLE Automatic Fire Curtains are designed to be robust and as simple as possible to provide minimum maintenance requirements while providing for features such as retract buttons, obstruction sensors and audio visual warnings.



Scenarios



Protected Means of Escape

When considering the placement and provision of a protected means of escape protection from fire and smoke are the paramount consideration.

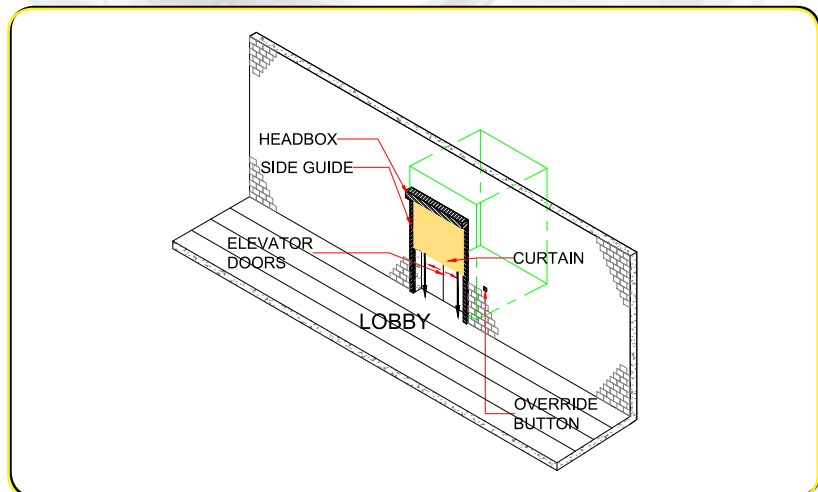
Traditionally a protected means of escape would be along a brick or concrete corridor. However, it may be that the building design does not lend itself to permanent, structural barriers. Using BLE Fire Curtains it is

possible to provide a protected means of escape that, when not in use, is retracted into the ceiling allowing for an unimpeded open area. The length of this escape route is potentially infinite utilising BLE's overlapping roller technology. The reduced irradiance of heat, combined with the reduction in temperature and the prevention of smoke egress that a BLE Curtain provides, allows the construction of an insulating zone in accordance with current smoke & fire legislation and standards.

Elevator Doors

Elevator shafts are a permanent compartment breach with the potential to spread flames and smoke vertically through a building very rapidly. While most, if not all elevator doors provide a degree of fire integrity this is not the same for smoke sealing. BLE Smoke & Fire are able to offer a recognised "Smoke Seal" curtain that can be discreetly installed into the surround facing the elevator door, rendering the curtain invisible when retracted.

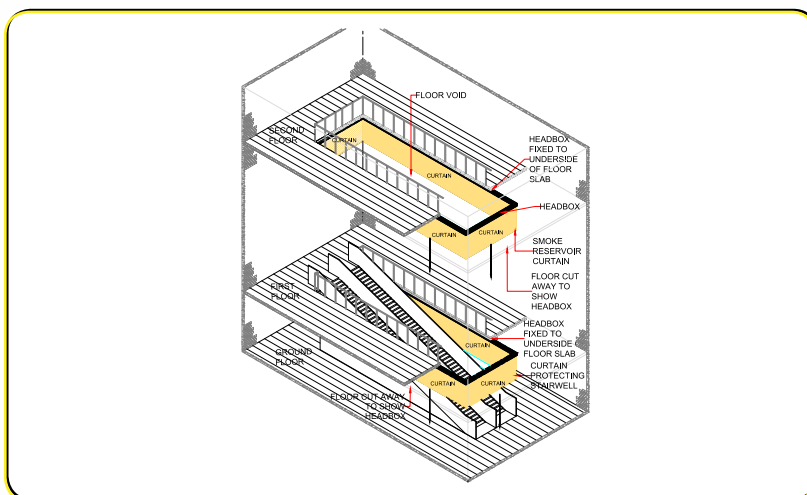
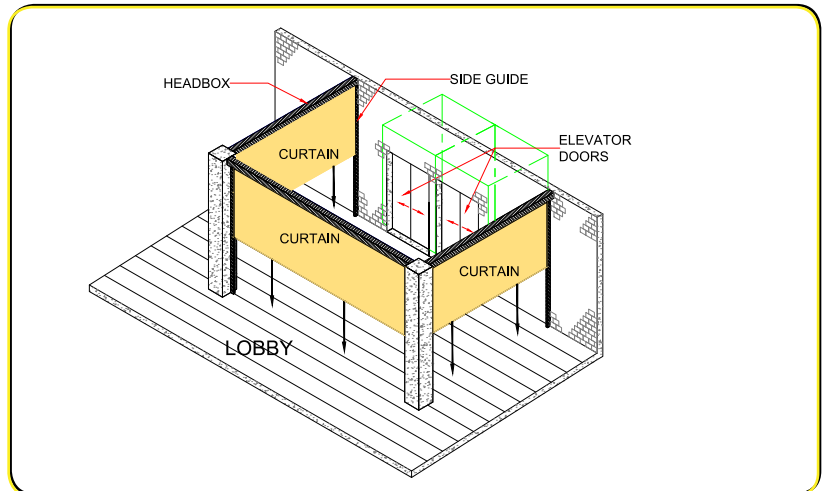
Once deployed it permits a greatly reduced level of smoke leakage falling inside the international leakage requirements.



Scenarios

Elevator Lobbies

While BLE Smoke & Fire can offer a smoke sealed curtain for the immediate face of any elevator door this may not suit the building fire strategy. It may be required to create a protected lobby in front of a bank of elevator doors. Where this would previously have required the construction of a physical fire and smoke rated partition, a three sided lobby can now be produced using curtains. Again, when not in use there is no physical impediment or restriction but once required a full integrity and, if required, smoke sealed lobby can be created.



Escalators & Stairs

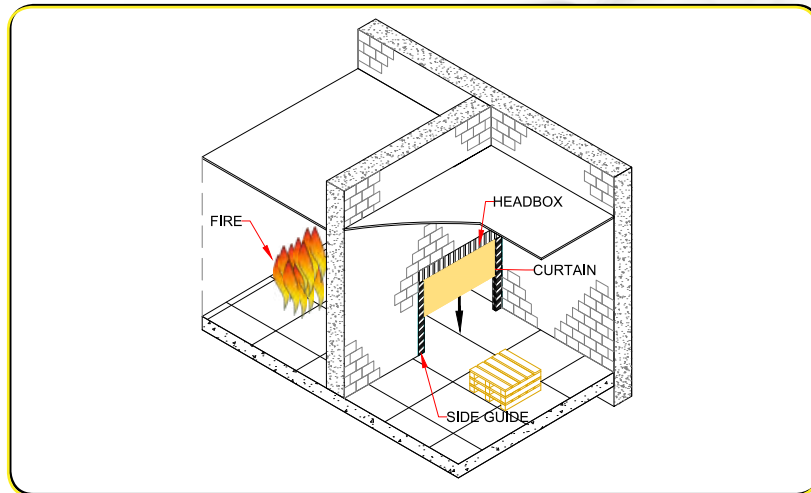
Both these items create a permanent breach in the compartment between floors. Using BLE Curtains this can be tackled in several ways depending on the strategy requirements. There is the option of using smoke curtains around the lower level to create a deeper reservoir depth or fully fledged fire curtains to seal off the escalator or stair well completely. In conjunction

with intelligent control systems allowing control to be linked to the escalator operation to facilitate escape as well as escape buttons this provides a tested and well used solution.



Fire Door Replacement

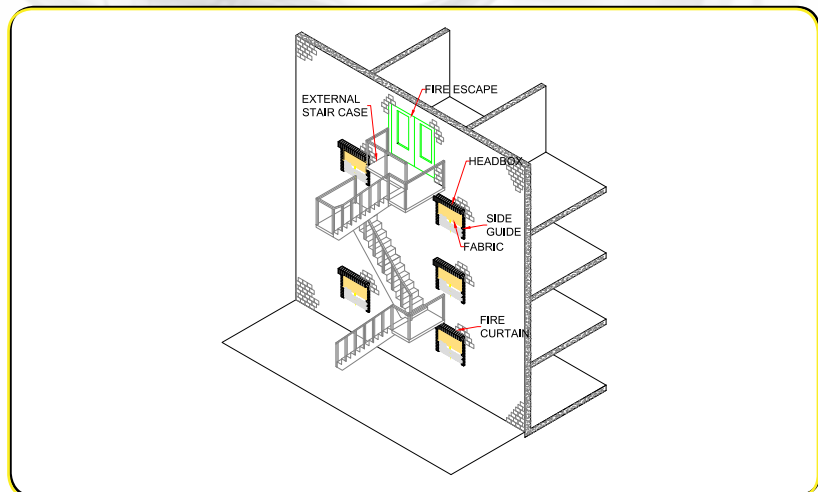
Fire doors are a necessary but cumbersome item. They are required in a great deal of situations however they are by nature heavy and restrictive to movement, difficult for small children and the elderly or disabled to open and awkward if carrying bags, pushing prams or operating wheelchairs. It is therefore commonplace to see these vital parts of a buildings fire strategy



wedged open, breaching all compartmentation requirements. A BLE fire curtain can be specified as an alternative offering the same levels of integrity and, if required, additional smoke sealing. The curtain can be recessed within the ceiling and walls, or face fixed depending on customer requirements. It will then remain there hidden, always ready to deploy in a fire situation due to its gravity fail-to-safe method of operation, even when all forms of consumable power are unavailable.

External Fire Escape Protection

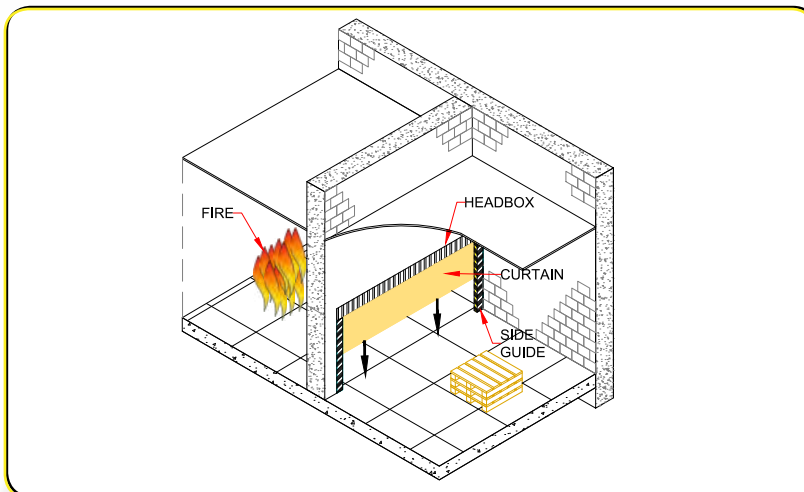
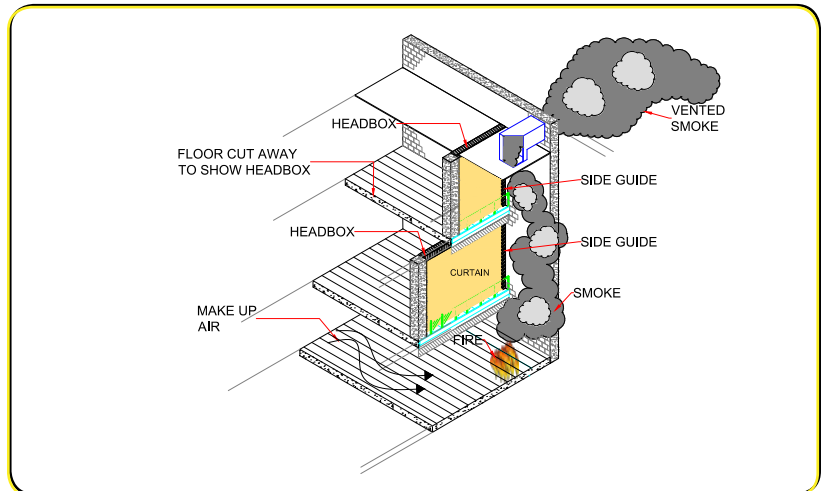
A number of buildings still utilise an external staircase running down a building to allow escape from each floor. However if the fire is on a lower floor then this means of escape is compromised. The installation of a BLE Curtain with IP rating allows curtains to be installed to the exterior of the windows in the zone of the external escape route providing protection to the stairs from smoke, irradiance of heat and high temperatures as well as naked flames.



Scenarios

Atrium Chimney

There are numerous office blocks and department stores that have impressive open atria designs spanning over many floors. To prevent the spread of smoke and fire from one floor to another and to facilitate the rapid extraction of smoke many of these use a roof level access system complemented by an inlet make up air facility and the deployment of BLE Curtains around the perimeter edge. Sophisticated control systems allow for the curtains to facilitate these strategies by employing staged and separate deployments, level by level or even curtain by curtain, with multiple alarm inputs being reacted to.



Fire Compartmentation

Forming fire compartments requires a curtain to have good levels of Integrity – the I Classification – and low levels of Irradiance of Heat – the W Classification. Curtains installed to form a compartment must be able to provide a physical barrier to the fire and prevent heat flux transfer of levels sufficient to ignite materials either side of the compartment. BLE Curtains provide the highest levels

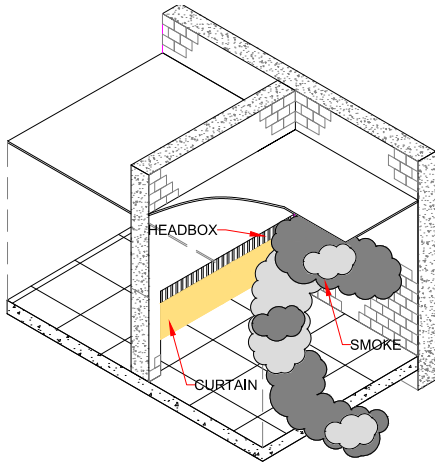
of protection certified for use around the world.



Smoke Compartmentation

Smoke compartments are formed to prevent smoke spreading throughout a building. They must be impermeable to smoke leakage, within set criteria, but also offer a level of resistance to heat. In particular protection must be provided to the rapid build up in heat caused by hot smoke hitting the barrier, a scenario in which some types of glass will shatter. BLE

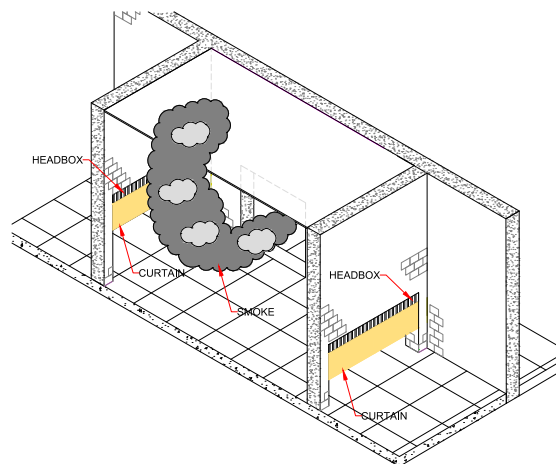
curtains provide excellent levels of smoke containment as well as high heat resistance.



Smoke Channelling

It is often desirable to direct smoke into certain zones for extraction. This is formed using small, rapid drop and often zone controlled banks of curtains. The major requirement for this type of curtain is fast deployment, minimum deflection and a high degree of tolerance to hot smoke.

Smoke channels should be installed with consideration given to their intended use in conjunction with large extract systems.



Draft Curtain

Alternatively known as:
Fixed/Static Barriers
Fixed/Static Curtains

Features

Static Draft Curtain incorporating X32K fabric.

- Time/temperature classification D120 to provide smoke control in industrial and commercial locations
- 120 minute integrity (E) to 600° C for smoke channel use.
- Meets the requirements of Annex C of BS EN 12101-1:2006 for smoke sealing.
- Unlimited width and drop
- Manufactured to suit any shape/size.
- Pocket hem for conduit to increase rigidity.
- Bespoke fixing methods available to suit most requirements.



Compliant with

BS EN 12101-1:2006

Appendix C Pressurised Air Leakage
Appendix D 2 Hour Fire Integrity

BS 476

Part 4 Non-Combustibility Test For Materials
Part 6 Fire Propagation
Part 7 Surface Spread Of Flame

NFPA 409

6.1.1(i) Draft Curtains For Aircraft Hangars



Smoke Curtain

Features

Standard Smoke Curtain incorporating X32K fabric

- 120 minute integrity (E) to 600°C for smoke channel use
- Excellent compartmentation properties
- Use of "S" Designation provides class leading smoke sealing
- Multiple control options.
- Overlapped curtains for large widths
- Oversized drops available
- Facetted curtains for curves possible.



Compliant with

BS EN 12101 – 1

Appendix B
Appendix C
Appendix D

Reliability & Response
Pressurised Air Leakage
2 Hour Fire Integrity

BS 476

Part 6
Part 7

Fire Propagation
Surface Spread of Flame

BS EN 1634 – 3

BS 7346

Pressurised Air Leakage System Test
2 Hour Fire Resistance & Integrity Test
Deflection Test

UL 10 D

UL 10 D

UL 10 C

UL 10 B

S Designation

Oversize Test
Overlapping Barrels
Fire & Smoke Protective Curtains 120 minutes
Above with Smoke Sealing

Control System

Group Control Panel

Split Drop Delay
Delayed Descent

Motor Control Cards

Options

Audio Visual, Heat and / or Smoke Detectors, Building Management System, Emergency Retract Buttons, Manual Override Switch, Curtain Decals, "S" Designation for Smoke Seals, "OS" Designation for 5.5m – 8m on a single barrel



1 Hour Fire Curtain

Features

60 Minute Fire Integrity Curtain incorporating X32K fabric

- 60 minute integrity to 1000°C
- Use of "S" Designation provides class leading smoke sealing
- Multiple control options.
- Class leading reduction of smoke leakage through the system.
- Provision of fire compartments and refuges
- Excellent replacement for fire doors



Compliant with

BS EN 12101 – 1

Appendix B
Appendix C
Appendix D
Part 22

Reliability & Response
Pressurised Air Leakage
2 Hour Fire Integrity
60 minutes integrity.

BS 476

Long drop

BS 476

BS 476

BS 7346

Part 6
Part 7

Fire Propagation
Surface Spread of Flame & Unlimited Width
2 Hour Fire Resistance & Integrity Test
Deflection Test
Oversize Test
Overlapping Barrels
Fire Integrity & Irradiance of Heat
Pressurised Air Leakage System Test
Fire Integrity Test

BS EN1634 – 1

BS EN1634 – 3

AS 1530.4

Control System

Group Control Panel

Split Drop Delay
Delayed Descent

Motor Control Cards

Options

Audio Visual, Heat Detectors, Smoke Detectors, Building Management System, Emergency Retract Buttons, Manual Override Switch, Curtain Decals, "S" Designation for Smoke Seals, "OS" Designation for 5.5m – 8m on a single barrel



4 Hour Fire Curtain

Features

240 Minute Fire Integrity Curtain incorporating C41000WK fabric

- 240 minute integrity (E) to 1000°C
- Provision of "Insulating Zone" for means of escape requirements
- Increased resistance to the irradiance of heat (W)
- Compliance with impact resistance standards
- Provision of a protected means of escape



Compliant with

BS 476	Part 22	240 minutes integrity. Long drop Unlimited Width
BS 476	Part 6	Fire Propagation
BS 476	Part 7	Surface Spread of Flame
BS EN1634 – 1		Fire Integrity & Irradiance of Heat
BS EN1634 – 3		Pressurised Air Leakage System Test
PAS 121		All Sections ex Irradiance
AS 1530.4		Fire Integrity Test
UL 10 D		Fire & Smoke Protective Curtains 120 minutes
UL 10 D	S Designation	Above with Smoke Sealing
UL 10 C		
UL 10 B		
GB14102 -2005		Integrity Test of Fire Curtain Assembly
GB14102 – 2005	Appendix B	Requirements & Test Methods of Fire Curtain Controller
GB602 – 2006		Test Method for Fire Curtain Motor
GB8624 – 1997		Test Method for Spread of Flame (Fabric Curtain)

Control System

Group Control Panel

Split Drop Delay
Delayed Descent

Motor Control Cards

Options

Audio Visual, Heat Detectors and / or Smoke Detectors, Building Management System, Emergency Retract Buttons, Manual Override Switch, Curtain Decals, "S" Designation for Smoke Seals, "OS" Designation for 5.5m – 8m on a single barrel



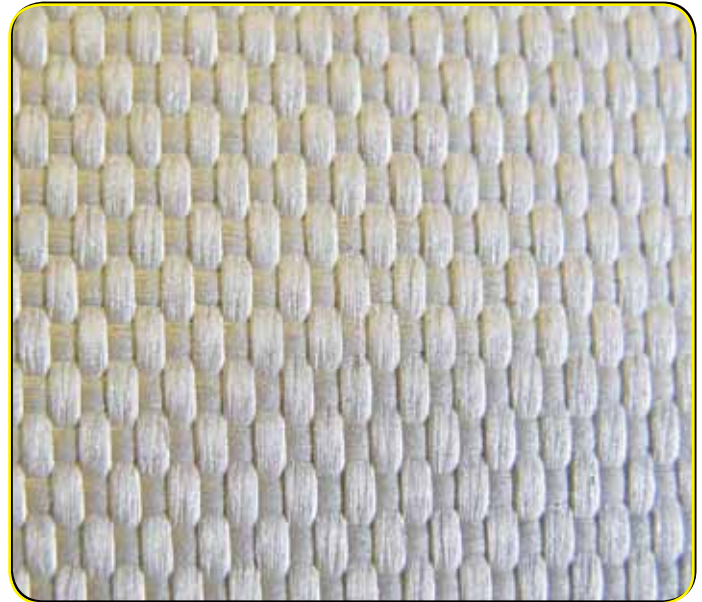
Fabric

X32K

BLE Automatic Smoke Curtain systems are generally manufactured from 415g/m² glass cloth with a 20g/m² micronised aluminium polymer coating on each side of the fabric. This fabric is manufactured & tested to withstand 1000° Centigrade for a period of 60 minutes.

All fabrics used in the manufacture of BLE smoke curtains are manufactured from a unique "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 constant thread tension.

The fabric is grey in colour, alternative RAL colours can be supplied although a minimum order quantity of 1000 linear metres will apply. Each curtain will be supplied with top and side hems, these shall be sewn using stainless steel thread. The stainless steel thread shall also be used to form the joining seams in larger curtains.



Fabric Code : X32K

Rating : 1000°C / 60 Minutes

Test Characteristics	Unit	Data as per Examination	Testing Method / Remark
Total Weight	g/m ²	455 ± 5%	DIN 53854
Width	Mm	1000 ± 1%	DIN 53851
Thickness	Mm	0.43 ± 5%	DIN 53855 T1
Weave		Leinwand	
Threads / Warp	Per Cm	18.0 ± 3%	EN1049
Fineness / Warp	Tex	EC9-68x2 ± 5%	DIN 53830
Tensile Strength / Warp	N/Cm	900	DIN 53857 T1
Threads / Weft	Per Cm	11.5 ± 3%	EN1049
Fineness / Weft	Tex	EC9-68x2 ± 5%	DIN 53830
Tensile Strength / Weft	N/Cm	550 ± 10%	DIN 53857 T1
Coating Quantity	G/M ²	35 ± 5%	
Single / Double Sided	½	2	DIN 52273
Application Temperature	°C	500 (Glass)	Oven Test
Application		Class 4 & 5 Curtains	



Fabric

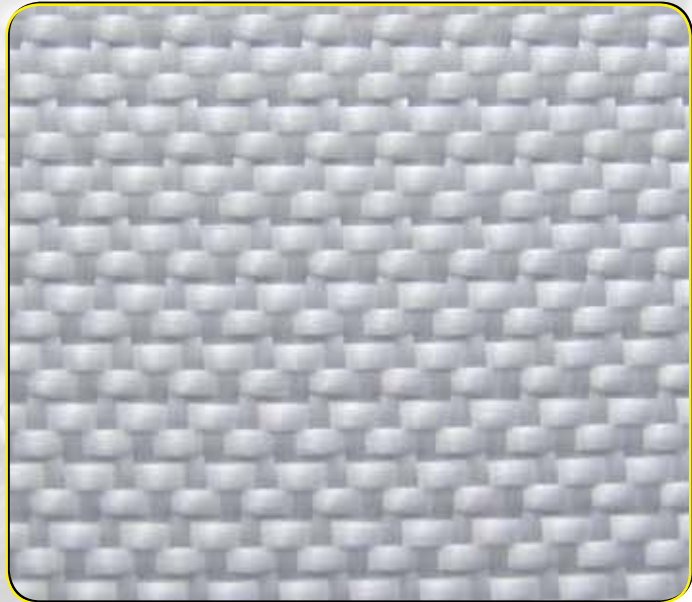
C41000WK

BLE Automatic Fire Curtain systems are generally manufactured from 660g/m² stainless steel, wire reinforced, woven glass fibre fabric coated on each side with silver polyurethane.

C41000WK fabric is rated at 1000° Centigrade for a period of 270 minutes.

The fabric is grey in colour, alternative RAL colours can be supplied although a minimum order quantity of 1000 linear metres will apply.

Each curtain will be supplied with top and side hems, these shall be sewn using stainless steel thread. The stainless steel thread shall also be used to form the joining seams in larger curtains..



Fabric Code : C41000WK

Rating : 1000°C / 270 Minutes

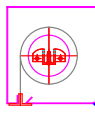
Test Characteristics	Unit	Data as per Examination	Testing Method / Remark
Total Weight	g/m ²	585 ± 5%	DIN 53854
Width	Mm	1000 ± 1%	DIN 53851
Thickness	Mm	0.50 ± 5%	DIN 53855 T1
Weave		Leinwand	
Threads / Warp	Per Cm	16.0 ± 3%	EN1049
Fineness / Warp	Tex	EC9-68x2+4VA ± 5%	DIN 53830
Tensile Strength / Warp	N/Cm	450	DIN 53857 T1
Threads / Weft	Per Cm	10.0 ± 3%	EN1049
Fineness / Weft	Tex	EC9-68x2 ± 5%	DIN 53830
Tensile Strength / Weft	N/Cm	550 ± 10%	DIN 53857 T1
Coating Quantity	G/M ²	35 ± 5%	
Single / Double Sided	½	2	DIN 52273
Application Temperature	°C		Oven Test
Application		Class 6 Curtains	



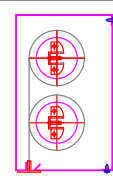
Components

Headboxes

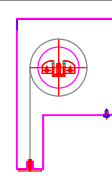
BLE Smoke & Fire offer a range of boxing to house the rollers that are intended to keep the profile as low as possible while minimising the effects of deflection and providing a secure and tested part of the fire line. Boxing for fire curtains can be as small as 180mm x 180mm up to 210mm x 390mm for extremely long runs of overlapping barrels. Smoke curtain boxing can be reduced still further to 150mm x 150mm for the smaller sizes and, on the longer runs, have the option of having the rollers over and under or in a side by side configuration.



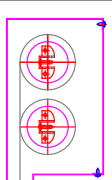
SINGLE BOX
FIRE CURTAIN
HEADBOX



OVER/UNDER
DOUBLE BOX
FIRE CURTAIN
HEADBOX



SINGLE BOX
FIRE CURTAIN
HEADBOX WITH
DOWNSTAND



OVER/UNDER
DOUBLE BOX
FIRE CURTAIN
HEADBOX WITH
DOWNSTAND

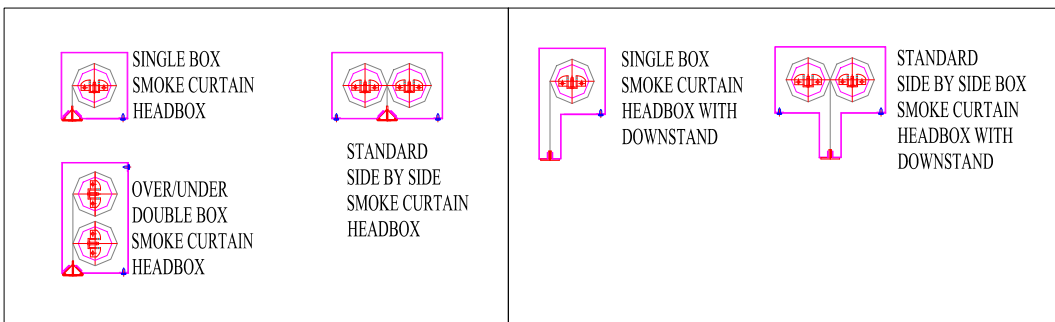
FIRE CURTAINS		
CURTAIN DROP	SINGLE BOX SIZE (W x H)	DOUBLE BOX Over / Under SIZE (W x H)
UP TO 3M	180 X 180	180 X 290
OVER 3M TO 8M	210 X 210	210 X 390
OVER 8M TO 12M	250 X 250	250 X 440

MAXIMUM RECOMMENDED SIZE OF DOWNSTAND 100MM



Headboxes

Headboxes can be installed to suit a number of required finishes. They can be installed above the ceiling and hidden from view; in line with the ceiling or installed into a slight recess. Whilst it is always desirable to minimise the visual impact of these items it must be considered that they are life safety systems and are required to be easily operable and easy to maintain.



SMOKE CURTAINS			
CURTAIN DROP	SINGLE BOX SIZE (W x H)	DOUBLE BOX Standard SIZE (W x H)	DOUBLE BOX Over / Under SIZE (W x H)
UP TO 3M	150 X 150	250 X 150	150 X 250
OVER 3M TO 8M	180 X 180	310 X 180	210 X 350
OVER 8M TO 12M	210 X 210	350 X 210	230 X 390

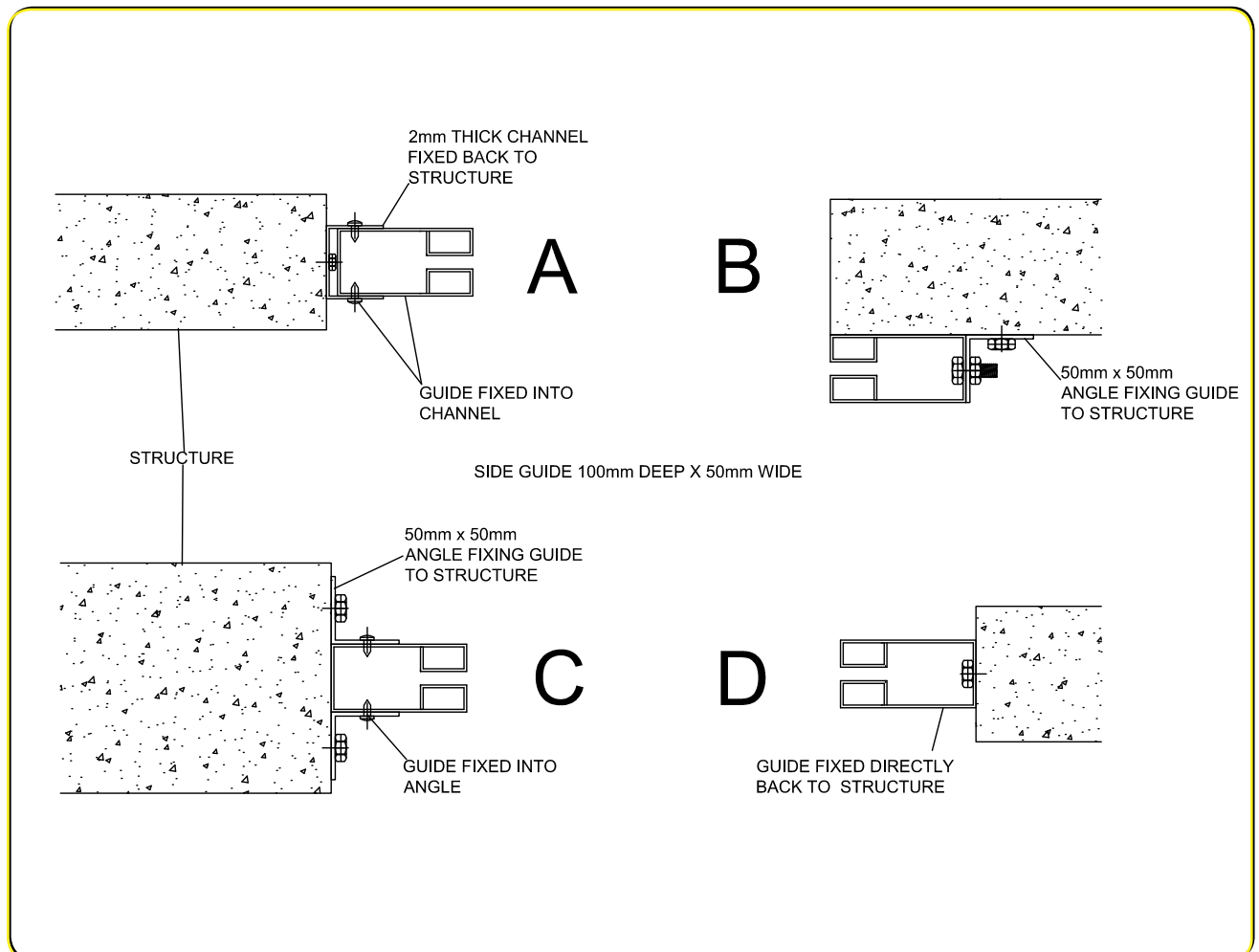
MAXIMUM RECOMMENDED SIZE OF DOWNSTAND 100MM

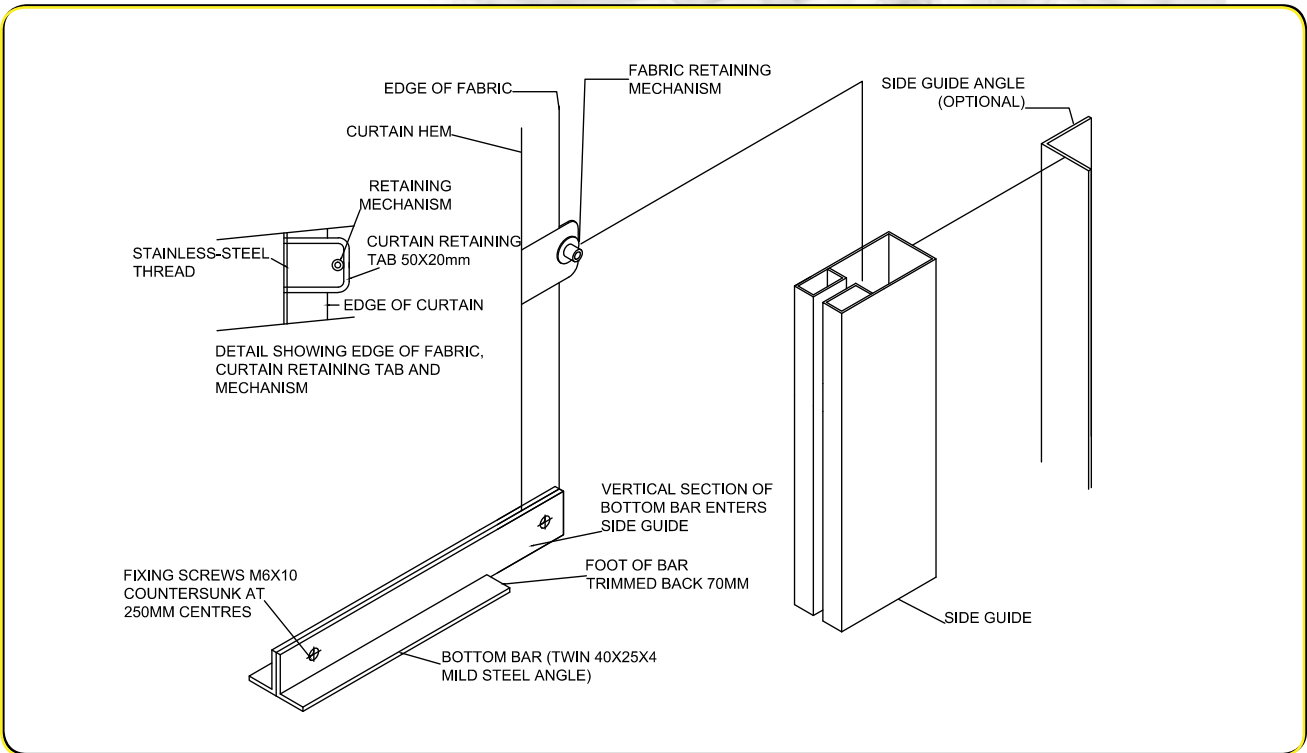
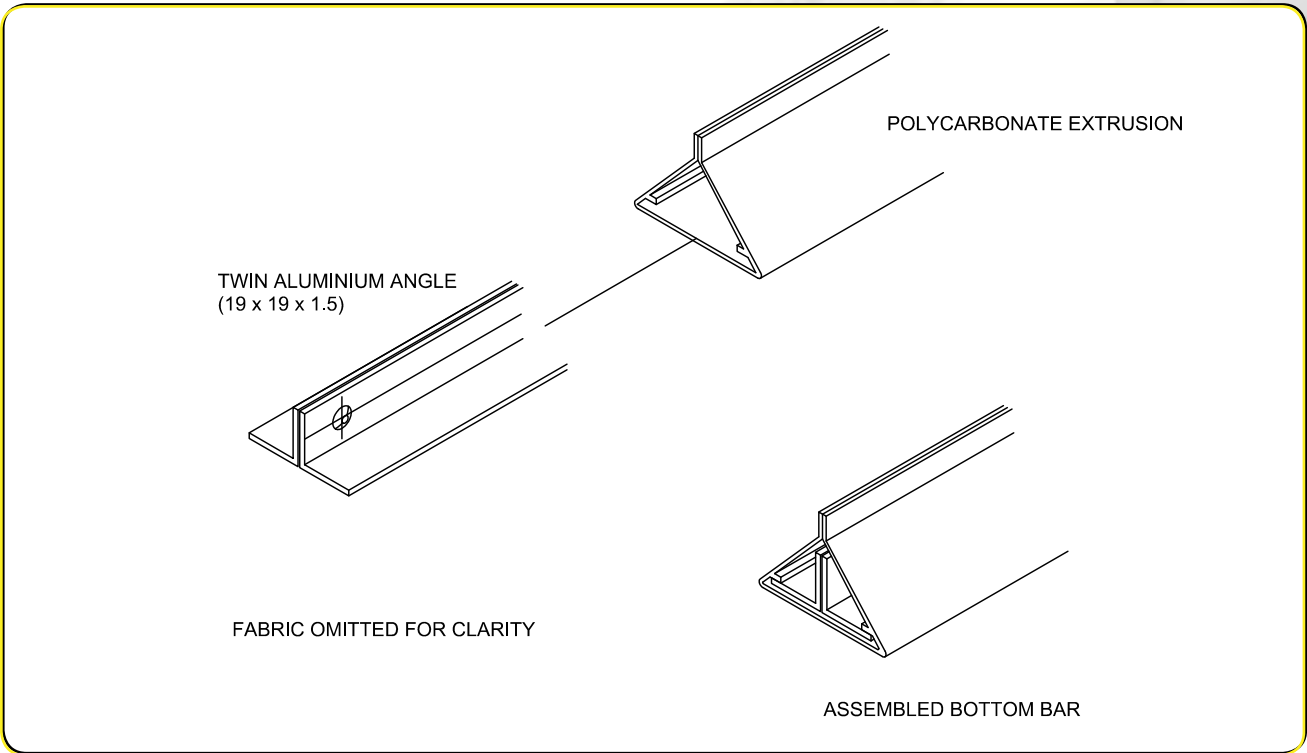


Components

Side Guides

All fire curtains require the use of a retaining mechanism at the edges to prevent excessive deflection under the pressures from a fire and to minimise smoke leakage. BLE Smoke & Fire utilise a low profile guide that is tested with the rest of the system to form an integral part of the fire line. The fabric incorporates a durable tabbed mechanism that locks the curtain into the guide to enhance this deflection resistance and improve the resistance to impact. Further enhancements such as brush strips to the guide and interior of the headbox can further seal the installation from leakage providing the "S" Designation. Smoke curtains do not always require guides however in certain situations they are utilised to better seal the compartment or to further minimise deflection. With the same modifications we can again offer the "S" Designation.





Components

Motors

Overview

The motors are permanent magnet DC motors. Their modest size yet powerful capacity mean that these motors are particularly suitable for semi-industrial applications such as rolling curtains or automatic doors.

Our motors are designed to give a long, maintenance-free service life. The careful selection of the appropriate components ensures a longer working life at the desired operating speeds.

Features:

Standard Motor

- 24v nominal voltage
- 3100rpm nominal speed
- Permanent magnet DC motors
- Back EMF controlled speed of descent, separate brake units are not required to assist
- Synchronised speed of descent approx. 130mm/s

Brake Motor

- Integral brake unit available to provide a 2 Stage Descent facility if required

Standard Gear Box

- 1400 NCM continuous torque
- 0.70 efficiency
- 100.00 ratio
- Axial shaft load capacity 150N
- Radial shaft load capacity 250N
- Equipped with a lubrication system with a high viscosity
- High torque gear transmission
- Resistance to large radial and axial forces due to the application of symmetrical force distribution



Components

Standard Motor Control Circuit (MCC)

Overview

The BLE powertrain comprises a 24v motor & motor control circuit. A control circuit enables each motor to lift a weight of 20 Kg whilst still being capable of meeting the cycle tests as required by BS 7346, EN12101, EN1634 and the new BS8524.

The motor control circuit is housed in a remote enclosure to aid maintenance engineers. Access is readily available to the control circuit to allow routine maintenance checks eradicating the need to extract the motor from the smoke curtain roller.

Up to 6 MCC's can be connected to the Group Control Panel. Motors for 127mm OS (OverSized) tube consume more current, and therefore maximum of 3 can be connected to a GCP.

Features:

- MCC Dimensions: 145 mm H x 250 mm L x 50 mm D
- Current limiting device incorporated, motor limit switches are not required
- Synchronised motor control circuitry, variable speed control is not required
- Back EMF controlled speed of descent, separate brake units are not required
- Battery low voltage cut off facility, the curtains descend in a controlled manner



Components

Group Control Panel

Overview

Operation of the BLE Smoke & Fire automatic curtains is carried out via a variant of the Group Control Panel. Each GCP is capable of controlling up to 6 no. BLE 24v motor assemblies (3 no. when using OS Curtains).

In normal operating conditions the GCP will provide a 24v AC supply to the curtain motors, and the curtains will be in the retracted condition. Should the curtain be activated, the fire alarm contact in the GCP will be opened by the fire alarm control system, the GCP 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 GCP will reinstate the 24v supply to the curtain motors and the curtains will retract, current limiting circuits will detect the curtain has fully retracted and the supply voltage to the motor will step down to a holding voltage.

Each GCP will be supplied with a 24v 7aph battery, this will enable full control of the system should the mains power fail. The battery voltage will be monitored, upon the voltage reaching 85% of the nominal charge it shall be disconnected and the curtains will deploy under gravity at a controlled speed.

Standard Features:

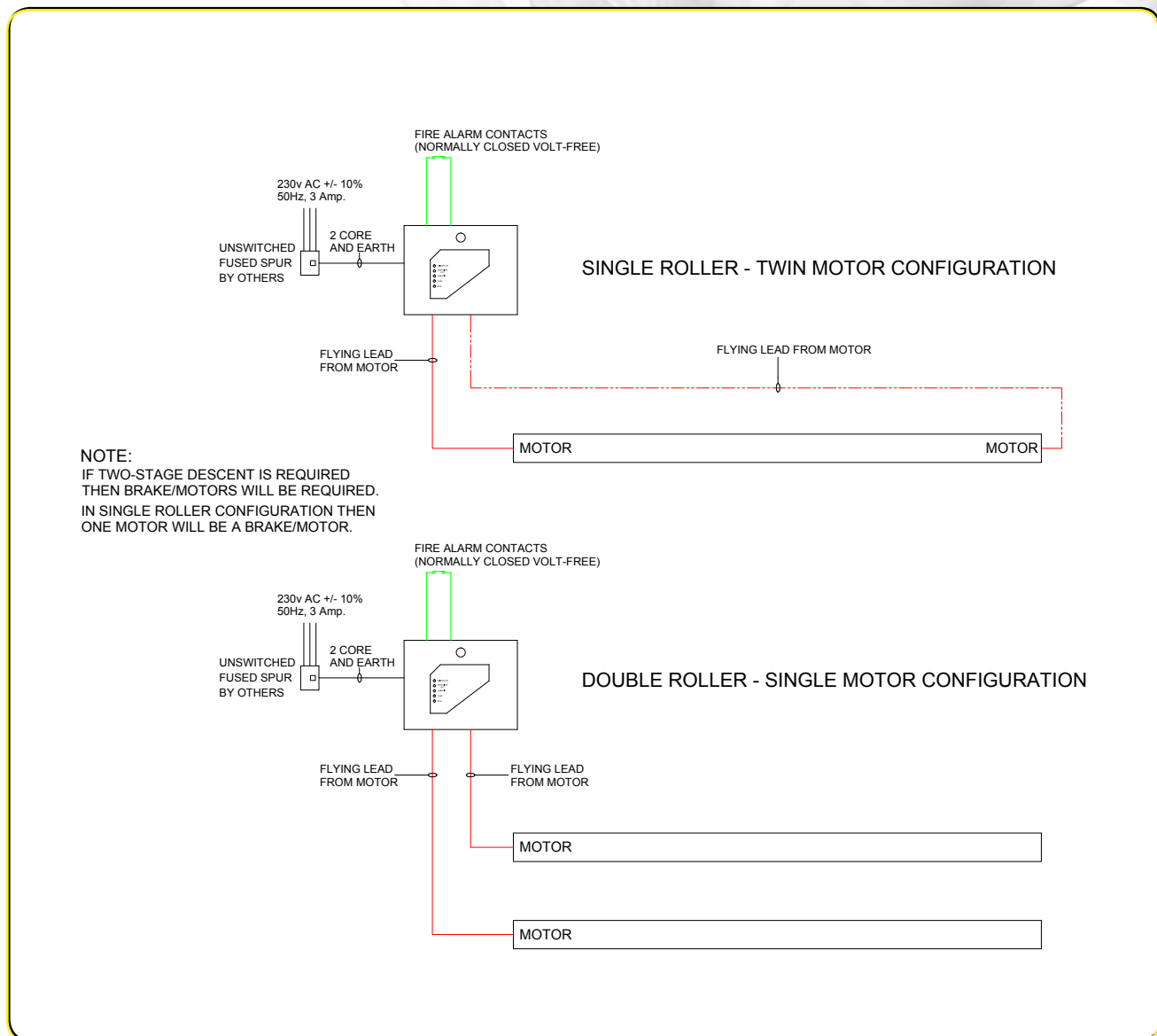
- Power Supply 230v 50Hz or 120-130v 60Hz AC
- Battery 3 Hours, 2 x 7aph rechargeable sealed lead acid cells
- Configured to operate from a normally closed signal, gravity fail to safe
- Key switch test facility
- Multiple LED indicators
- Panel Size 396mm h x 334mm w x 105mm d



Schematic

Single Curtain Schematic

The Single Curtain Control Panel has been designed to operate a single curtain with up to 2 no. motors, or 2 no. single-motor curtains located in the same area of a building. The SCC panel provides maximum cost efficiency for smaller projects whilst also including a provision for the most common additional features required – 2 Stage Descent, Manual Override, and an Audio-Visual facility.



Schematic

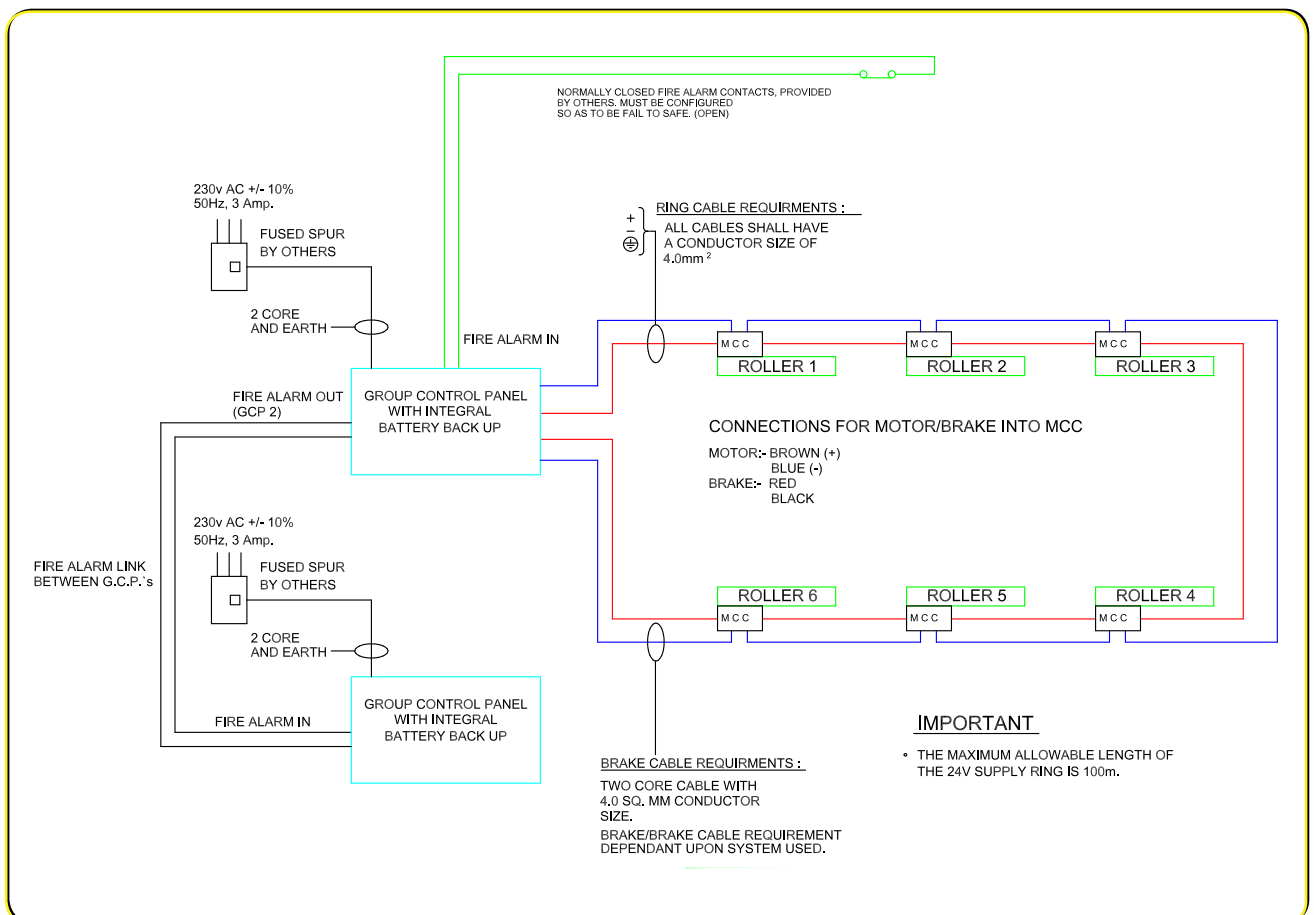
Multiple Curtain Schematic

Our standard wiring schematic, utilising BLE's standard Group Control Panel. Up to 6 no. motors can be controlled, linked by a 24V supply ring wired in 4.0 sq. mm (or greater, depending on required loop length) 2 core FP 200 cable.

The control panel is powered via a 230V AC +/- 10% 50Hz 3 Amp unswitched fused spur, and receives a fire alarm signal via a pair of normally-closed, volt-free fire alarm contacts. When the fire alarm activates these contacts switch to 'open', causing the control panel to cut off the power supply to the curtain motors. This in turn results in the curtains deploying under the force of gravity (fail-to-safe) without relying on any consumable power source.

A secondary brake cable can be added (as shown) if a 2 Stage Descent facility is required.

Group Control Panels can also be linked together (as shown) if the total number of motors exceeds 6 no., with one of the GCPs acting as the 'master' panel. This avoids the need for each control panel to have its own fire alarm signal and ensures that all curtains drop simultaneously.



Installations

New Doha International Airport, Qatar

Called upon to design, supply and supervise the installation of Draft curtains to protect the vast new A380 Airbus maintenance hangars, BLE rose to the challenge, coming in on time and within budget. In this project the sky was quite literally the limit, with the curtains installed at 30m above ground level. The project demanded thousands of square metres of draft curtains, so to provide them BLE installed an additional curtain cutting and sewing floor within our purpose-built factory in Sheffield.



MIT Brain and Cognitive Sciences Building

When the new Brain and Cognitive Sciences Complex was commissioned, engineers from BLE and CYSA Developments worked on the smoke model with Turner Construction and then designed the smoke management system to suit the challenging architecture. BLE curtains were used to create smoke zones and protected means of escape throughout the complex. Our US Distributor CYSA carried out the installation to exacting standards under BLE supervision.



Installations

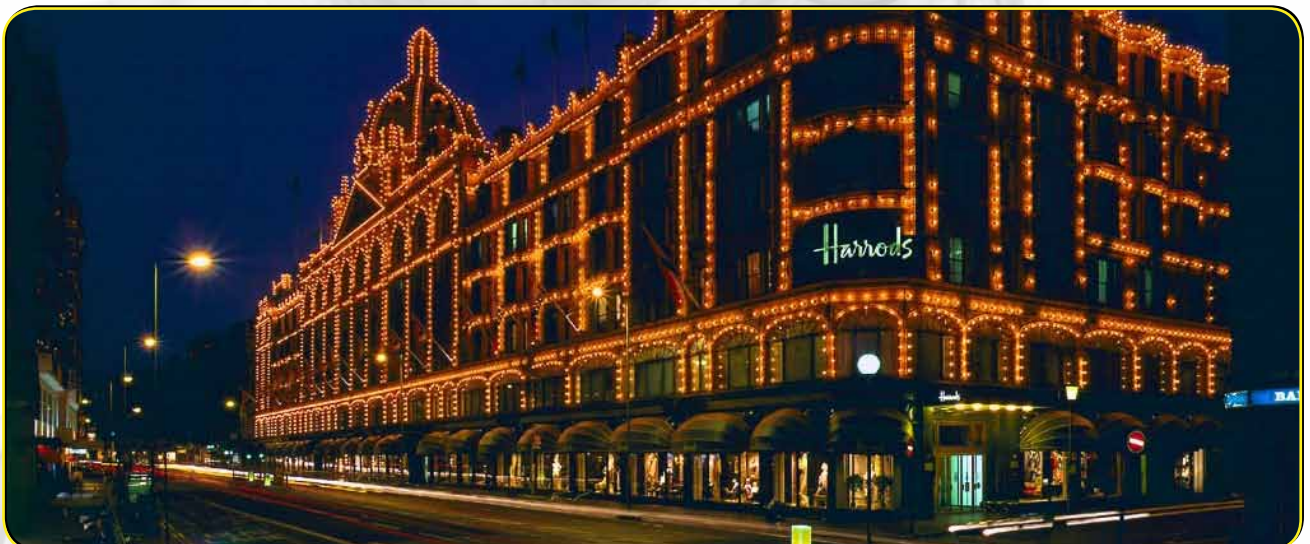
Westfield Stratford City, London

In October 2010 BLE Smoke & Fire Curtains secured the £200,000+ contract to provide smoke & fire curtains throughout Westfield's flagship new shopping mall located in London's 2012 Olympic Park. The largest retail development of its kind in Europe required hundreds of smoke and fire curtains installed quickly and professionally, and most importantly the hand-over deadline had to be met in time for the grand opening on 13th September 2011. BLE exceeded expectations on all fronts.



Harrods, London

BLE curtains are being specified and installed throughout this famous department store on an on-going basis to provide solutions for smoke and fire compartmentalisation, to provide protected means of escape and to seal off high-risk areas such as escalators and lift lobbies.. BLE systems are designed to be efficient and unobtrusive, seamlessly integrating into the walls and ceiling to maintain the aesthetic appeal of Harrods' iconic luxury shopping departments.



Marina Bay Sands

This astounding marvel of architecture has been protected by BLE curtains from the day it opened in 2010. Holding the record at the time as the most expensive hotel ever built, no expense was spared in ensuring that it was outfitted with the very best in smoke and fire protection. BLE worked closely with Ferco Shutters & Seating Systems Pte Ltd, our distributors in Singapore, to protect the spectacular central atrium with huge 12.5m drop smoke curtains.



John Lewis

The John Lewis Partnership had no hesitation in once again selecting BLE for their flagship Oxford St store, continuing our long-standing relationship after BLE installed curtains in their Edinburgh, Cardiff and Bluewater stores. BLE smoke curtains were specified to contain and then channel smoke for smoke extraction, protecting atria, escalators and a large food hall.



Installations

Delhi Airport Metro, India

When Delhi Airport Metro Express Private Limited (DAMEPL) were looking for fire protection, they came to Sheffield-based BLE Smoke & Fire Curtains for their market-leading smoke and fire barriers. Working in association with our distributor Transcend Exim Pvt Ltd, the smoke and fire barriers provided by BLE have been used to protect and compartmentalise the metro's operational and retail areas.



Ferrari World, Abu Dhabi

BLE once again worked in partnership with our regional distributor Energy International to provide fire curtain protection for Ferrari World, the largest indoor theme park in the world. When it came to specifying fire curtains for this prestigious attraction, BLE were the obvious choice. As the first and only manufacturer in the world able to offer fully tested and UL listed fire curtains, Ferrari could be sure that they were on to yet another winner with BLE.



Testing & Standards Compliance for Fire Curtains Summary

Test Name	Test House	Test Parameter
BS 476: Part 22	Warrington Fire	Vertical Fire Curtain Vertical Fire Curtain with Overlap 270minutes FR & Integrity Increased number overlapping curtains & drop FR & Integrity of 120, 180 & 240 minutes for single and overlapping systems. FR & Integrity of 120 minutes at 8m drop Unlimited overlap and 7m drop for 180 & 240 minutes FR & Integrity 10m wide single barrel x 7m drop 120minutes FR & Integrity 6m wide single barrel x 7m drop 240 minutes FR & Integrity
BS EN 1364 - 1	BRE	FR & Integrity 180 minutes overlapped curtain
BS EN 1364 – 2		
BS EN 1363 – 1		
BS EN 1363 – 2		
BE EN 1634 – 1		Provided E60 (integrity) I30(insulation)
BS EN 1634 – 3		Smoke Control for Fire Doors & Shutters demonstrating Air Leakage through System
BS EN 8524 – 1 (Draft)	Warrington	Curtains to EW120
BS EN 8524 – 2 (Draft)	Warrington	Curtains to EW120
AS1530.4	Branz Australasia	FR & Integrity Test 125 minutes
EN 55024	EMC	Authorised declaration of conformity for electrical components
EN 12101 Part C	Warrington Fire	Pressurised Air Leakage Test
EN 12101 Part D	Warrington Fire	2hr FR & Integrity Test
EN1634 – 3	Warrington Fire	Pressurised Air Leakage Test in accordance with EN12101 not to exceed <25m3
UL 10 D	UL USA	Fire & Smoke Protective Curtains 120minutes FR & Integrity
UL 10 D S	UL USA	Fire & Smoke Protective Curtains 120minutes FR & Integrity with Smoke Sealing
UL 10 C		
UL 10 B		
GB14102-2005	China	Furnace / Integrity Test of Fire Curtain Assembly
GB14102-2005 Appendix B	China	Requirements & Test Methods of Fire Curtain Controller
GB602 2006	China	Test Method for Fire Curtain Motor
GB8624 1997	China	Test Method for Spread of Flame (Fabric Curtain)

Testing & Standards Compliance For Smoke Curtains

Test Name	Test House	Test Parameters
BS 476: Part 6	Warrington Fire	Fire Propagation of Building Products
BS 476: Part 7	Warrington Fire	Surface Spread of Flame
EN 12101 Part B	BRE	Reliability & Response Time Test 10m wide x 3m drop specimen 3m wide x 10m drop specimen
EN 12101 Part C	Warrington Fire	Pressurised Air Leakage Test
EN 12101 Part D	Warrington Fire	2hr FR & Integrity Test
EN1634 – 3	Warrington Fire	Pressurised Air Leakage Test in accordance with EN12101 not to exceed <25m ³
BS 7346	Warrington Fire	2hr FR & Integrity Test Deflection Test Oversize Test Overlapping Barrels
UL 10 D	UL USA	Fire & Smoke Protective Curtains 120minutes FR & Integrity
UL 10 D S	UL USA	Fire & Smoke Protective Curtains 120minutes FR & Integrity with Smoke Sealing
UL 10 C		
UL 10 B		





BLE IS RECOGNISED AS THE LEADING EXPERT IN THE DESIGN, MANUFACTURE, COMMISSIONING, INSTALLATION AND MAINTENANCE OF FIRE DETECTION AND PROTECTION SYSTEMS, SECURITY SYSTEMS, EMERGENCY LIGHTING AND CONDENSATE PUMPS.

At BLE we are consistently striving to develop new applications in all of our divisions. These applications can range from supplying a single product, such as an emergency light, to fully integrated fire and security systems incorporating our leading smoke and fire curtains, access control products, fire detection systems and emergency lighting, all controlled through our monitoring systems.

So whether you are involved in education, healthcare, finance, or any commercial activity, if you are interested in securing one room or 300 buildings BLE has a product or service that is right for you.

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