



SMOKE & FIRE CURTAIN

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Introduction

NAFFCO was founded in Dubai, UAE to become the world's leading producer and supplier of life safety solutions. By recognizing the importance and convenience of having easy access to multiple safety services, we became specialized by offering complete solutions under one roof for all types of high quality firefighting equipment, fire protection systems, fire alarms, addressable emergency systems, security systems, custom-made vehicles such as fire trucks, ambulances, mobile hospitals and airport rescue firefighting vehicles (ARFF).

With the most talented and dedicated employees from around the world, NAFFCO has over 2,000 passionate engineers and over 6.5 million square feet of manufacturing facilities. We are currently exporting to over 100 countries worldwide.

NAFFCO manufactures UL, FM, BSI & Global Mark approved products in our facility in consistent with International Standards UL-DQS, BSI certifies for the Quality Management System against ISO 9001. Our Environmental (ISO 14001) & Occupational Health & Safety (ISO 45001) Management Systems have been certified by UL-DQS. Our Trucks & Vehicles division has been assessed & certified for Quality Management System requirement for Aviation, Space & Defense organization (AS 9100) by UL-DQS.

Our Fire and Smoke curtains are undergoing extensive R&D on regular basis to improve and expand the product line while providing ease of access, longevity and integrity.

Our success is driven by our passion to protect; our vision is to become the world's number one provider of innovative solutions in protecting life, environment and property.



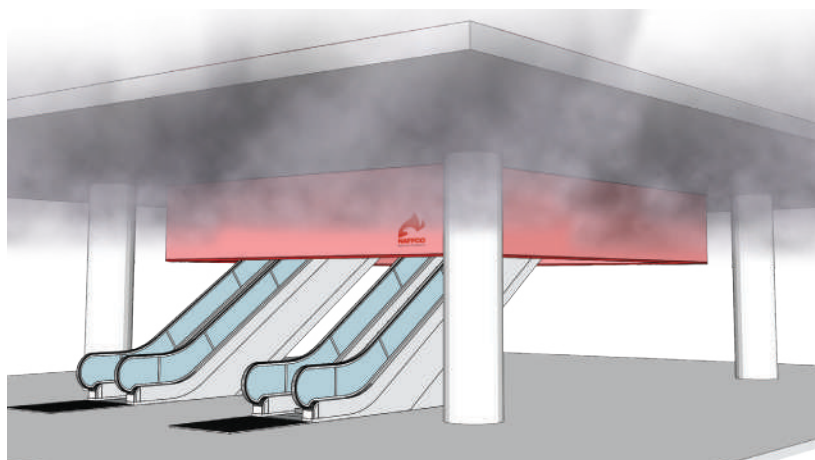
Applications

for Fire & Smoke Curtains



Elevator and Elevator Lobbies

Elevator shafts are the common conduits for the spread of fire and smoke which can enshroud the entire building in a short period. Even though elevator doors are fire rated, they do not provide a smoke seal. Fire curtains with smoke seals can be used in this scenario to contain the smoke from spreading into the lobby.



Escalators and staircases

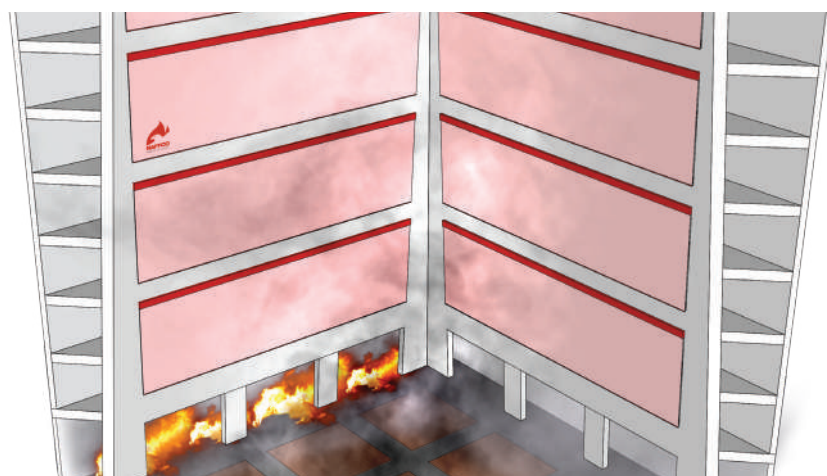
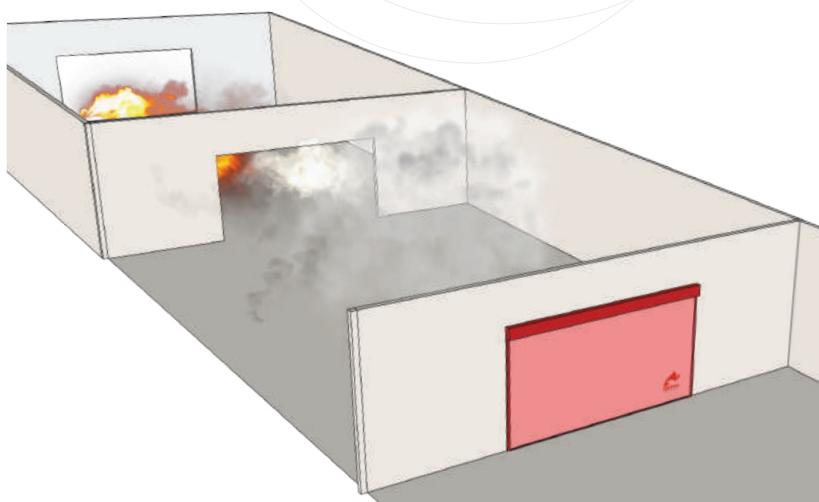
Both escalators and staircases are breaches between floors and can be an easy means for the spread of fire and smoke throughout the building. Using NAFFCO's fire and smoke curtain, the spread can be controlled and directed to provide easy escape for the occupants.

Corridors and Escape routes

Fire curtains and smoke curtains are easily retractable which allows for quick and effective evacuation during emergency situations. Our curtains come with various means of egress* that allow for safe evacuation once deployed in the fire scenario.

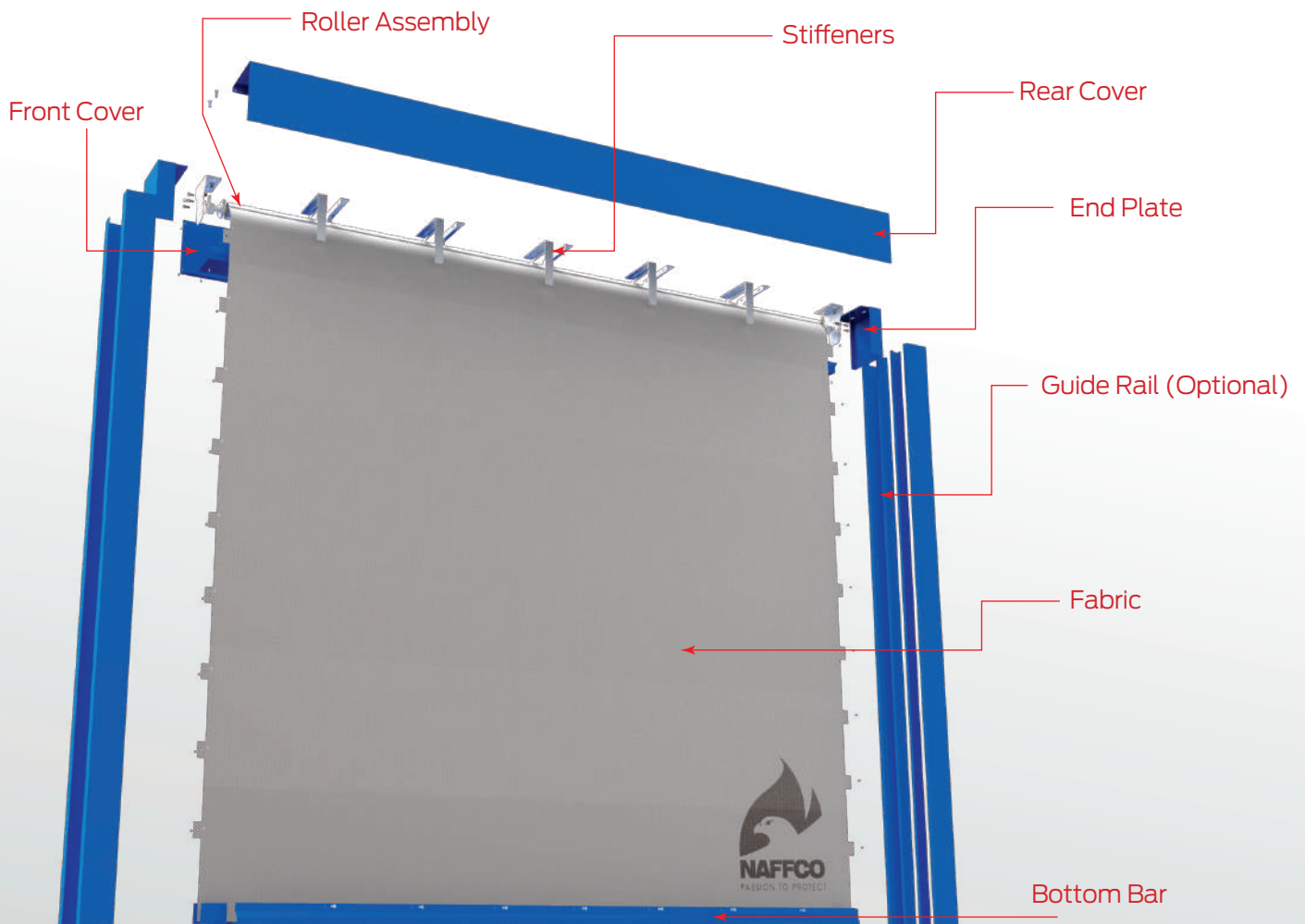
Compartmentation

Preventing the spread of fire and smoke from one zone to another is a crucial element of fire compartmentation strategy. NAFFCO's fire and smoke curtains respectively work as a physical barrier and help to contain the spread of the fire and smoke throughout the building.



Smoke channeling

Smoke curtains are extremely ideal for channeling smoke to desired locations where smoke extraction systems can act and direct the smoke outside the premises.

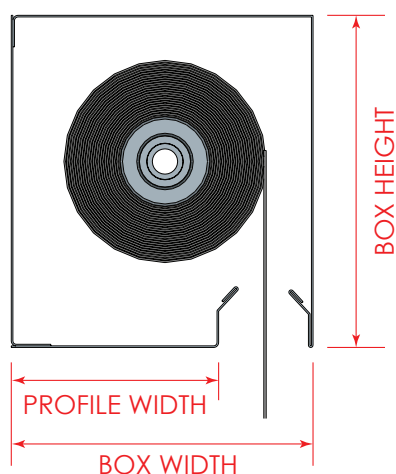


Schematic Representation



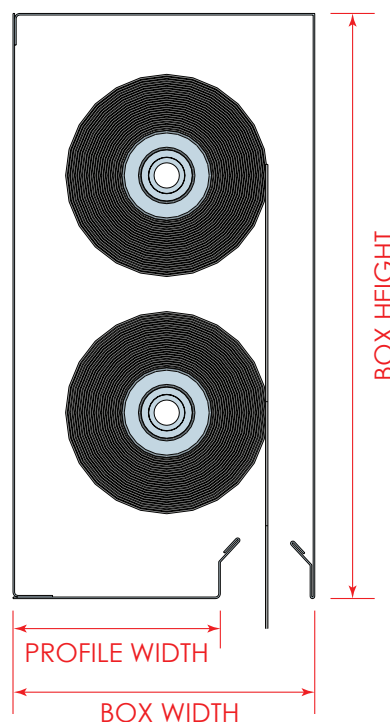
Head box arrangements

Single Barrel Arrangement



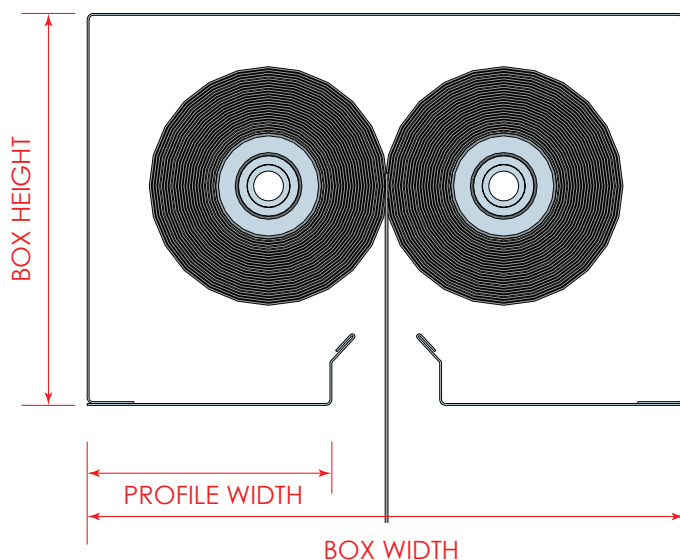
Single roller headbox can be provided for widths upto 6 meters and for heights upto 9 meters, while maintaining small sizes of head box which can be mounted in various methods.

Multi Barrel Up & Down Arrangement



Multiple roller arrangement is for curtains of unlimited widths and for heights upto 6 meters under BSEN standards and upto 10 meters under UL standards.

Multi Barrel Front & Back Arrangement

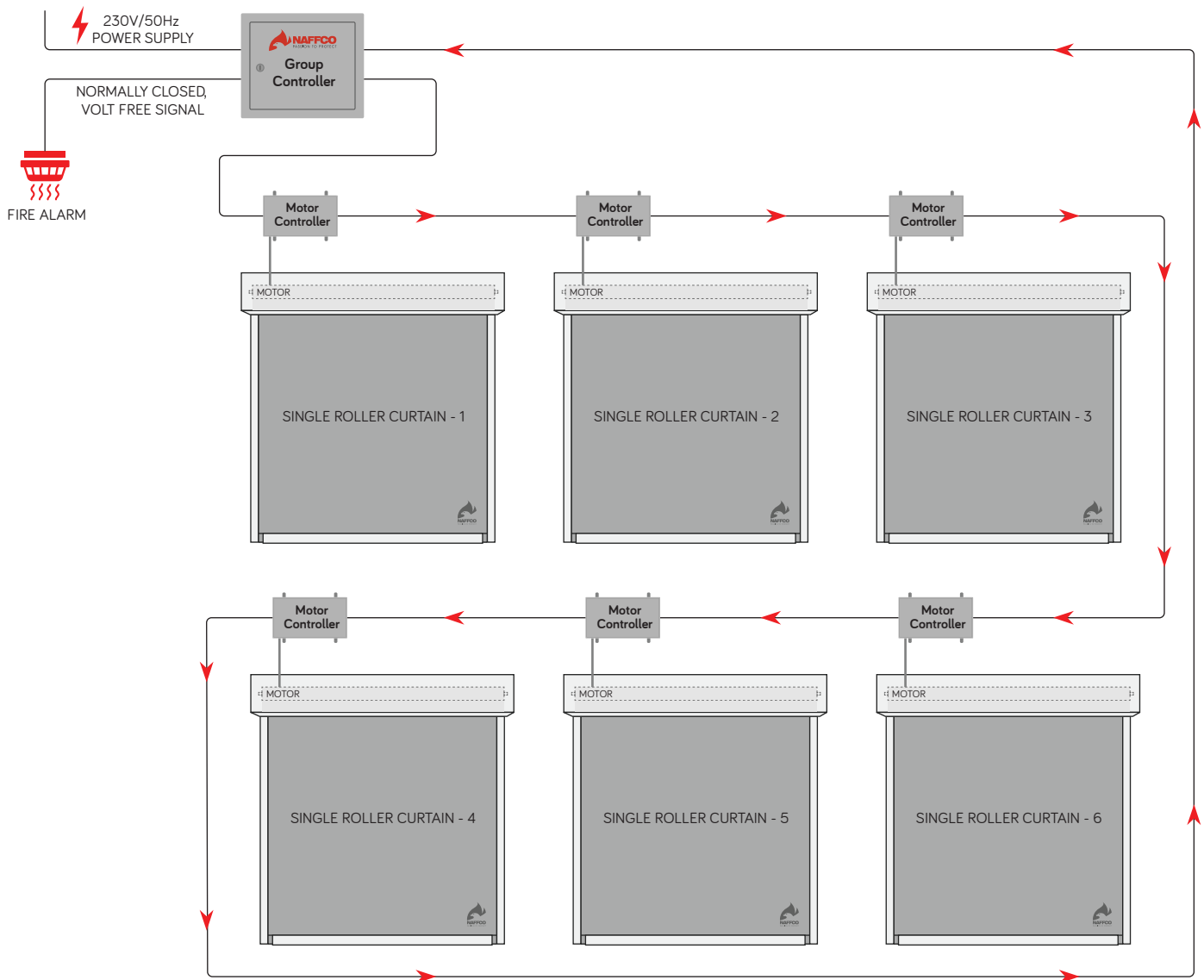


Multiple roller head boxes are also available in side by side configuration as shown in the figure. These arrangements are preferred for requirements where the height of the box (BH) need to be kept minimal.



Basic Wiring Layout

Every Motor requires a control unit to operate whether it is for deploying the curtain or to retract it to its resting positions. The Motor controllers are connected to the group controller. Maximum of 6 no's 20 Watt motors can be connected to the group controller or 3 no's 40 watt motors can be connect-



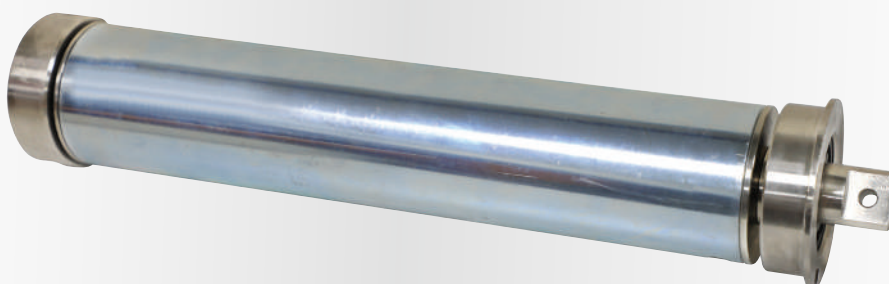
Control Systems - Generic Arrangement

Motor Assembly

The assembly is made of a Free end shaft , Motor drive and gearbox which sits inside a 64mm Diameter housing.

The reduction ratio for the 20 Watt motor is 1:100 with a RPM of 31

The reduction ratio for the 40 Watt motor is 1:162 with a RPM of 12.5



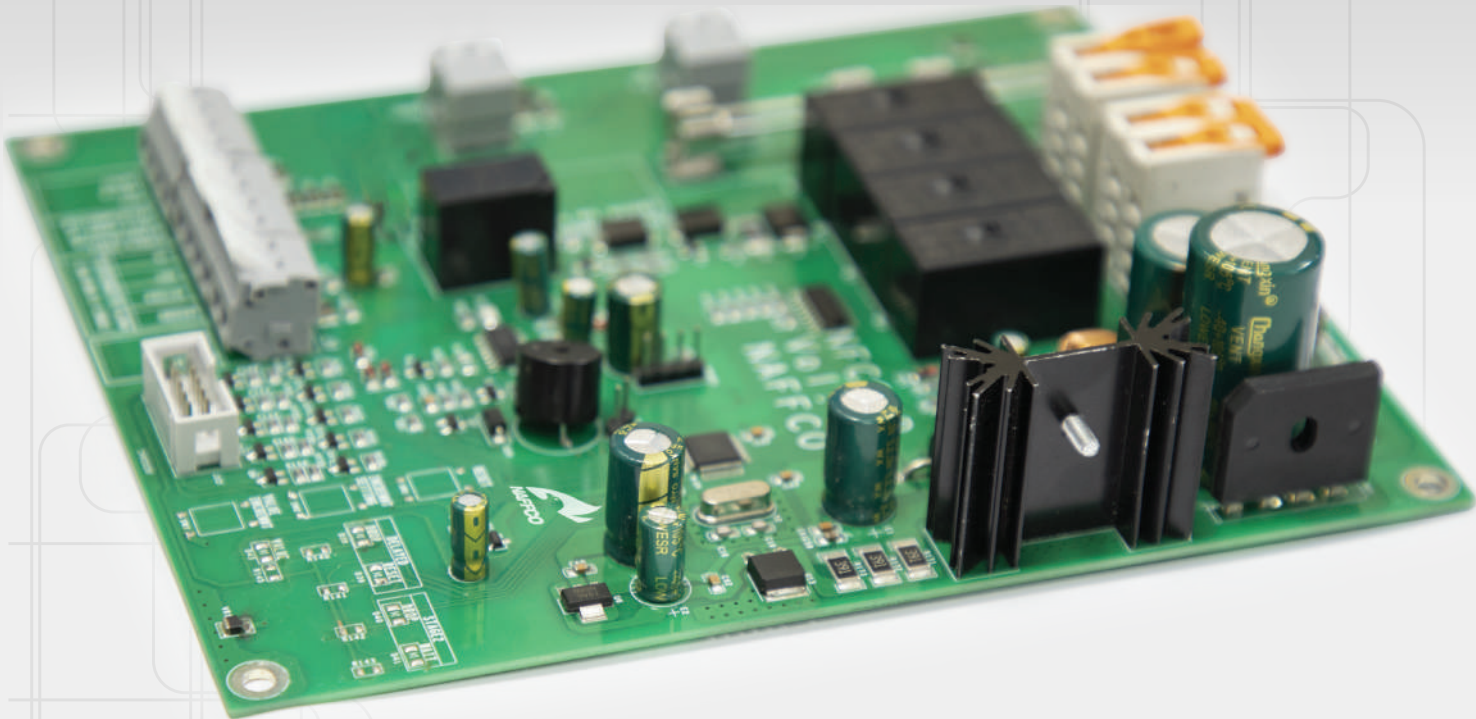
The motor unit is UL listed which ensures high quality and performance at all times regardless of the temperatures during fire scenarios

The assembly is housed inside our roller unit which is mounted inside the head box that negates the use of an external motor unit.

Motor Ratings

DESCRIPTION	NF-20W	NF-20WB	NF-40W	NF-40WB
Rating	18.5 W	18.5 W	37.7 W	37.7 W
Operating Voltage	24VDC	24VDC	24VDC	24VDC
Brake Rating	NA	6.3 W	NA	6.3 W
Motor Type	DC	DC with brake	DC	DC with brake
Motor Lifting Capacity	18-20 Kgs	18-20 Kgs	30-32 Kgs	30-32 Kgs

Control Units



MOTOR CONTROLLER

FIRE & SMOKE CURTAIN

FIRE & SMOKE CURTAIN

MOTOR CONTROLLER

The Group Controller

This is the main control unit which receives the signal from the fire alarm and send the signal to curtain for deployment or retraction.

The Group controller can be integrated with the building management system.

The Group Controller (GC) 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 remains 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 curtain

One GC has the ability to control a maximum of 6 no's 20 Watt motor.



If the number of motor exceeds 6, Group Controller's can be linked together.

This avoids the need for each GC to be supplied with its own fire alarm signal.

This set up also ensures synchronous descent of multiple curtains. Should a 2 stage descent is required, a brake is added to the motor which is energized by an additional brake cable.

In the event of a mains power failure, each GC is supplied with a battery back-up system providing up to a minimum of 60 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.

MOTOR CONTROLLER

FIRE & SMOKE CURTAIN

FIRE & SMOKE CURTAIN

MOTOR CONTROLLER



Fire Curtain

Single & Multi Barrel



Fire containment systems prevent the spreading of smoke from one zone to another. NAFFCO curtain comprises of flexible heat resistant fabric with fire integrity up to 240mins.*. The tube contains a DC electric motor which holds the curtain retracted at ceiling level at all times and deploys upon the receipt of fire alarm signal. The bottom bar ensures safe and controlled descent of the curtain with gravity fail safe.

System tested to

- EN 1634-1
- UL10D
- UL10D S
- UL1784
- BS476 part 6 & 7**



Max. Height	Max. Width	E	EI	EW
12 meters	Unlimited	240	-	30

Product Complies

- Certifire
- UL

*NF-WRGF0667/120

**Fabric tested.

Fire Integrity

- Up to 240 min.

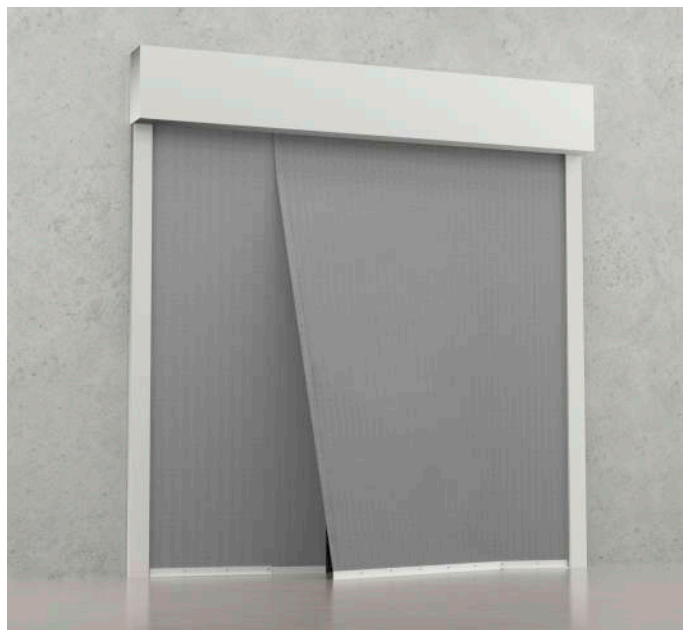


Specifications

Fabric	PU-coated glass fabric, 690 g/m ² , color grey, Non - Flammable according to DIN 4102-1, A2.
Unwind	Controlled Gravity Descend
Windup	24 VDC motor integrated with planetary gear
Installation	Ceiling or wall mounted
System dimensions	System width ≤ 25000 mm Unwinding length ≤ 12000 mm
Head box	GI Sheet 1.2 mm powder-coated
End section	GI Sheet 2.5 mm powder-coated
Classification/Standard	UL 10D
Side guides (SFS)	Steel 2.5 mm powder-coated, dimensions (W x D) 50 x 100 mm. The curtain material will be delivered with a restrain system. In this way, it prevents the curtain material being pulled out sideways from the tracks in case of deflection by pressurization (e.g. excess pressure by fire.)



Egress Fire Curtain



Max. Height	Max. Width	E	EI	EW
6 meters	Unlimited	120	-	30

Fire Integrity

- Up to 120 min.



Fire containment systems prevent the spreading of smoke from one zone to another. NAFFCO curtain comprises of flexible heat resistant fabric with fire integrity up to 120mins.* The tube contains a DC electric motor which holds the curtain retracted at ceiling level at all times and deploys upon the receipt of fire alarm signal. The bottom bar ensures safe and controlled descent of the curtain with gravity fail safe.

By utilizing an egress door that allows individuals to pass without retracting the curtain. NAFFCO automatic egress fire curtains provide fire separation without impeding the transit of occupants exiting the area.

Egress curtain can be used in elevator lobbies, cross corridors and various passage ways and escape routes.

System tested to

- EN 1634-1
- BS476 part 6 & 7**

Product Complies

- Certifire
- UL

*Egress
 **Fabric tested.

Specifications

Fabric	PU-coated glass fabric, 690 g/m ² , color grey, Non - Flammable according to DIN 4102-1, A2.
Unwind	Controlled Gravity Descend
Windup	24 VDC motor integrated with planetary gear
Installation	Ceiling or wall mounted
System dimensions	System width ≤ 25000 mm Unwinding length ≤ 12000 mm
Head box	GI Sheet 1.2 mm powder-coated
End section	GI Sheet 2.5 mm powder-coated
Classification/Standard	EN 1634-1
Side guides (SFS)	Steel 2.5 mm powder-coated, dimensions (W x D) 50 x 100 mm. The curtain material will be delivered with a restrain system. In this way, it prevents the curtain material being pulled out sideways from the tracks in case of deflection by pressurization (e.g. excess pressure by fire.)

Smoke Curtain

Single & Multi Barrel



Max. Height	Max. Width	E	EI	EW
12 meters	Unlimited	60/120	-	-

Fire Integrity

- Up to 120 min.



Specifications

Fabric	PU-coated glass fabric, 455 g/m ² , color grey, Non - Flammable.
Unwind	Controlled Gravity Descend
Windup	24 VDC motor integrated with planetary gear
Installation	Ceiling or wall mounted
System dimensions	System width ≤ 25000 mm Unwinding length ≤ 12000 mm
Head box	GI Sheet 1.2 mm powder-coated
End section	GI Sheet 2.5 mm powder-coated
Classification/Standard	EN 12101 / UL 1784
Side guides (SFS)(Optional)	Steel 2.5 mm powder-coated, dimensions (W x D) 50 x 100 mm. The curtain material will be delivered with a restrain system. In this way, it prevents the curtain material being pulled out sideways from the tracks in case of deflection by pressurization (e.g. excess pressure by fire.)

Smoke containment systems prevent the spreading of smoke from one zone to another. NAFFCO curtain comprises of flexible heat resistant fabric with fire integrity up to 120mins.*. The tube contains a DC electric motor which holds the curtain retracted at ceiling level at all times and deploys upon the receipt of fire alarm signal. The bottom bar ensures safe and controlled descent of the curtain with gravity fail safe.

System tested to

- BS EN 12101-1 Annex B (Reliability, Response Time and Material Durability)
- BS EN 12101-1 Annex C (Air Leakage Test)
- BS EN 12101-1 Annex D (Fire Resistance Test)
- Fabric tested to BS 476 Pt 6 and Pt 7, EN 13501-1
- BS 8524-1:2013 Severe Duty Impact Test (with Side Guides)
- UL 10D, UL 1784

Product Complies

- Certifire
- UL

*NF-RGF0455/60



Automatic Fire Curtain Accordion



System tested to

- UL10D
- NFPA 252
- BS EN 1634-1:2014
- BS 476 part 6 & Part 7 and achieved Class 0 (Fabric)

Compliance

- NFPA 80
- UL

Fire Integrity

- Up to 240 min.



NAFFCO Accordion Fire Curtain systems prevent the spreading of fire from one area to another. The Curtain assembly comprises fire-rated fiberglass fabric uniquely folded into a compact head box that is typically installed above the ceiling with a finished bottom tray. This makes the system virtually invisible until activated. The curtain descends at a controlled speed upon receipt of signal from a fire alarm and provides fire integrity for up to four hours*.

We are constantly developing and enhancing our fire curtains to ensure compliance with the latest standards and regulations.

Advantages

- An ideal solution for buildings with large open spaces.
- UL listed product.
- Lightweight & Compact design, low head room requirements.
- Unlimited width, custom sizes and layouts.
- Manufactured with intricacy using advanced machinery.
- Meeting Bespoke requirements.
- Do not require any columns or corner posts
- Guaranteed Gravity Fail Safe (no power needed).

Applications

Elevator Halls, Atriums, Escalators, and Other void areas.

*NF-WRGF0667/120



FABRIC DATA SHEET

NF-RGF0455/60

Specification

NF-RGF0455/60 is our lightest woven glass fabric coated with fire retardant aluminum-pigmented polyurethane on both sides.

NF-RGF0455/60 provide high temperature resistance and reflectivity, which provides a heat-reflecting surface along with other properties to manufacture smoke curtains, fire curtains & Barriers.

Fabric Reaction to Fire

BS EN 13501-1:2007+A1:2009 A2,S1,D0

BS EN 1201-1+A1

BS EN 1631-1

BS EN 1634-3:2004



Fabric Data

Character	Unit	Value	Tolerance	Test Standard
Finished Fabric				
Weight	g/m²	455	±5%	
Thickness	mm	0.4	±5%	
Coating Weight	g/m²	40	±10%	
Coating Application	Both Side			
Base Fabric				
Weight	g/m²	415	±5%	
Wave Pattern	2x2 Broken Twill			
Thread Count Warp	per CM	18	±5%	
Thread Count Weft	per CM	11	±5%	
Yarn Count Warp	Tex	EC9 136		
Yarn Count Weft	Tex	EC9 136		
Standard Color	Grey			
Reaction to Fire	CLASS 0			See above
Application Temp.	Up to 600°C			
Tensile Strength Warp	N/cm	1080		
Tensile Strength Weft	N/cm	640		

FABRIC DATA SHEET

NF-WRGF0667/120

Specification

NF-WRGF0667/120 is a high performance heavyweight stainless steel wire reinforced woven glass fabric coated with fire retardant aluminum-pigmented polyurethane on both sides. Fabrics are tested to BS476 –6 & BS 476 -7 for fire propagation and flame spread index respectively and rated to CLASS 0 rating.

NF-WRGF0667/120 provide high temperature resistance and reflectivity, which provides a heat-reflecting surface along with other properties to manufacture smoke curtains, fire curtains & Barriers



Fabric Data

Character	Unit	Value	Tolerance	Test Standard
Finished Fabric				
Weight	g/m²	690	±5%	
Thickness	mm	0.7	±5%	
Coating Weight	g/m²	50	±10%	
Coating Application		Both Side		
Base Fabric				
Weight	g/m²	640	±5%	
Wave Pattern		8H Satin		
Thread Count Warp	per CM	16	±5%	
Thread Count Weft	per CM	15	±5%	
Yarn Count Warp	Tex	EC9 68/2 V4A		
Yarn Count Weft	Tex	EC9 68/2 V4A		
Standard Color		Grey		
Reaction to Fire		CLASS 0		BS476 Part 6 & 7
Application Temp.		Up to 1100°C		
Tensile Strength Warp	N/cm	930		
Tensile Strength Weft	N/cm	640		

Certifications & Approvals



Certifications & Approvals

CERTIFICATE OF COMPLIANCE

Certificate Number R40527
Report Reference R40527-2021-05-26
Date 2021-June-07

Issued to: NATIONAL FIRE FIGHTING MFG FZ CO
 PO BOX 17014
 JEBEL ALI FREE ZONE
 DUBAI AE

This is to certify that FIRE-PROTECTIVE CURTAINS
representative samples of See Addendum Page for Product Designation(s).

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: ANSI/UL 1784, Air Leakage Tests of Door Assemblies.
 NFPA 105, Standard for Smoke Door Assemblies and Other Opening Protectives

Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information

This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

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CERTIFICATE OF COMPLIANCE

Certificate Number R40527
Report Reference R40527-2021-06-28
Date 2021-July-06

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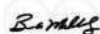
Standard(s) for Safety: ANSI/UL 10D, Standard for Fire Tests of Fire Protective Curtain Assemblies

Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information

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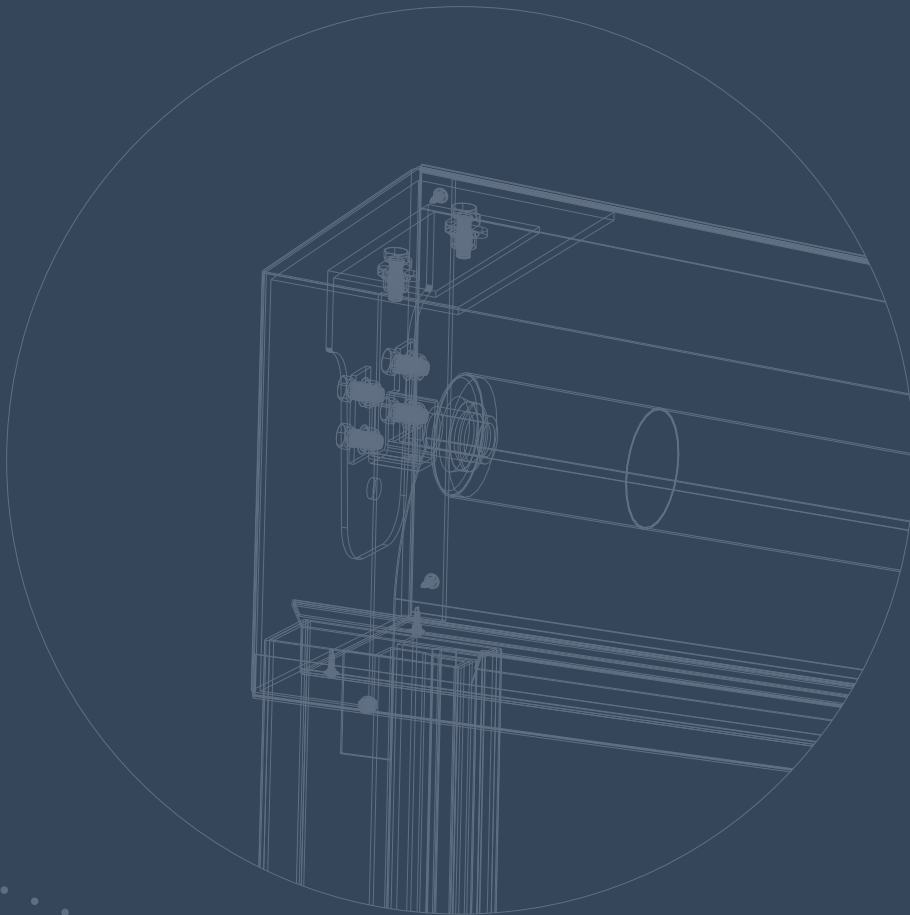


Bruce Mahrenholz, Director North American Certification Program

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smoke & fire
curtain

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