



# PRODUCT SPECIFICATION

FireMaster® Concertina™

## 1 GENERAL

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### 1.1 Scope

Coopers FireMaster® Concertina™ active fire curtain barrier assemblies ("Fire Curtain") are to be designed, fabricated, delivered, installed and commissioned with all required components as outlined in this specification.

### 1.2 Design Requirements and Considerations

#### **Pressurisation, air movement and smoke management systems**

Whilst operating, the Fire Curtain should not have any air movement across its surface. Any air movement systems should be shutdown prior to activation of the fire curtain and any mechanical plant should not start up until the Fire Curtain is fully closed. The closing time of the Fire Curtain for a 2.7m high ceiling is approximately 45 seconds. The pressure differential across the fire curtain should be commissioned to not exceed 30Pa to ensure that the system is not unduly stressed. Please consult with the local supplier prior to designing the system as some of the options selected could affect the overall performance.

#### **Structural movement of the building**

Ensure that expansion joints do not intersect with part of the Fire Curtain headbox which would compromise the integrity of the fire barrier. Any concerns consult with the local supplier.

#### **Construction tolerance**

The Fire Curtain is an engineered product that is required to be installed to exacting tolerances. The required installation tolerance of the headbox is  $\pm 2\text{mm}$  end to end. When installing to substrate and interfacing with other building elements, these elements will be installed to different tolerances e.g. concrete could have an installation specification of 6mm in every 3m to a maximum of 25mm. Any concerns consult with the local supplier.

#### **Fire resistance requirements**

As an uninsulated fire barrier, the use of a Fire Curtain in Australia is required to be substantiated as suitable for the project/application as part of a fire engineered solution. The required fire resistance requirement for the Fire Curtain is to be substantiated to be suitable for the opening it is protecting.

#### **Activation requirements for the fire barriers**

Often the Fire Curtain is providing protection against fire or smoke spread from all parts of the building, not only localised to the Fire Curtain. Ensure the correct activation requirements of the fire curtain are clearly identified.

#### **Optional Items that are required with the product**

Consider and included the required Optional Items in Section 2.6 of this specification.

#### **Maintaining the area underneath the curtain as clear from obstructions**

The Fire Curtain is a concealed, operable fire barrier. Its default position is down and is only maintained in the up position provided there is no risk or hazard in the area. Alarm activation or prolonged loss of power (more than 30 minutes) will cause gravity descent of the Fire Curtain. It is required as part of the design to ensure that suitable provisions are in place to maintain the area under the Fire Curtain as clear from obstructions at all times as the Fire Curtain could be activated at any time.

#### **Ceilings & Partitions**

Ensure that the ceiling does not protrude into the line of the headbox and does not bend or distort the headbox. If the design of the bottom tray is to finish below the headbox, there needs to be a minimum of 10mm clearance from the edge of the bottom tray to the adjacent ceiling finish.

#### **Egress Paths**

The Fire Curtain fabric acts like a sail and will inflate when pressurised and when in fire mode. If there are egress paths close to the fire curtain, ensure that the path width is wide enough considering the deflected fabric.



### Floor finishes

Non- combustible flooring is required under the Fire Curtain. Should other floor finishes be required, the suitability of these flooring materials are to be addressed in the fire engineering solution. Coopers FireMaster® Concertina™ has been proven by fire testing to stop fire spread with a number of different floor finishes. Consult with the local supplier for further information.

### Handrails, balustrades and other possible building elements close to the Fire Curtain

A design tolerance of minimum 100mm should be used as between the bottom tray position and any building elements, such as balustrades, chairs, benches etc., to ensure that whilst operating the Fire Curtain does not hit any of these items whilst operating.

### No fixing to the Fire Curtain

The components of the Fire Curtain cannot be fixed to by any other building element. Any ceiling or wall items that require fixing are to be independently framed and fixed, ensure they are not attached in any way to the Fire Curtain.

### Control panel location

The controls for the Fire Curtain can be supplied with individual controllers for each motor supplied adjacent to the motors in the ceiling space or as grouped control panels with all serviceable control items in one central location. Grouped control panels usually provide for easier access for service and maintenance. It is often best practice to locate the controls for the fire curtain at low level in an electrical or communications cupboard rather than in the ceiling space. Consider nominating the location and requirements of the controls for the Fire Curtain as this will be the location where power and alarm signals will need to be provided and will also identify the requirements for control cabling between the controller and Fire Curtain.

## 1.3 Related Works

### Structure

Suitable fire rated substrate is required to affix the headbox and side guides (open design only). Concrete or timber rated plasterboard substrate to FRL of -/120/120 or -/240/240 depending on the fire rating requirement of the Fire Curtain.

### Electrical

240V 20A dedicated and maintained power supply to each Fire Curtain supplied from the essential services supply where available.

### Fire

Normally closed volt free (0V) alarm signal to each Fire Curtain

### Access panels or removable ceiling tiles

They are required to each motor location for commissioning, service and maintenance requirements.

### Mechanical

Ensure that all air handling equipment is off whilst the Fire Curtain is deploying and start-up of the mechanical plant is delayed until the Fire Curtain is fully deployed. Pressure differential across the fire curtain should be commissioned to not exceed 30Pa. Consider that the fire curtain will leak when designing the system.

## 1.4 Standards and Compliance

All standards testing and compliance is required to be completed and witnessed by a Registered Testing Authority that is NATA approved. The testing needs to be issued as a Test Report, Assessment Report, Classification Report or Formal Opinion Report.

### Fire Engineering Report

The reference Fire Engineering Report must also be complied with as well as the requirements of this specification. Any discrepancies between this specification and the fire engineering report are to be advised and rectified prior to order.

|                                   |
|-----------------------------------|
| A. Fire Engineering Report: ..... |
|-----------------------------------|

### Fire Resistance

AS 1530.4: 2005 : Fire-resistance test of elements of construction

- FRL of - / 240 / - for sizes up to unlimited length and drop height of 6 metres. There can be unlimited sides with each side up to 30 metres long, unlimited corners with each corner being 60 - 180° angle.



- Must have successfully passed a full scale test (largest size possible to be tested) of the complete product assembly with the tested prototype matching the requirements of supply for the project. i.e. if there are side guides then they are tested, if it is closed design that has also been tested.
- Assessment report outlining the maximum sizes that the product can be supplied and that these sizes and designs match what is required for the project.
- Assessment report confirming that the substrate has been tested and approved by a NATA accredited agency.
- Assessment report confirming the installation methodology and support framing system has been approved by a NATA accredited agency.
- Any passive fire rating system above the headbox has been confirmed through testing and assessment to provide suitable fire stopping as part of the Fire Curtain system.

BS EN 1634-1 : European fire resistance test for non-loadbearing elements. Walls

- Classification E180 EW60 C1 Grade 3, Class "0"
- Period of radiation 120 minutes < 15kW/m<sup>2</sup>
- Approved for spans unlimited in width, heights up to 5 metres for 240 minutes integrity or heights up to 8 metres for 120 minutes integrity.

### Smoke Leakage

AS 1530.7:2007 : Smoke control assemblies - Ambient and medium temperature leakage test procedure

- Testing of air leakage performance to show the performance through the product assembly.
- Air (smoke) leakage not exceeding 0.5 m<sup>3</sup>/m<sup>2</sup>/hr at 25Pa through the fabric.
- Any gaps in the construction to be modelled using EN12101.1.

### Reliability performance

BS 8524-1 : 2013 : Clause 5.3 : Active fire barrier assemblies. Part 1 Specification

- Performed 1040 cycle testing without maintenance or adjustment on a 32 lineal metre specimen of height 4.57 metres.
- Tested to EN 12605 : 2000 for mechanical resistance to be classified under EN 14600 : 2005 for self-closing operations to C1 for 500 cycles.
- Met the requirements of EN 12101-1 : 2005 to B3 for 1,000 cycles

### Impact performance

BS 8524-1 : 2013 : Clause 5.2 : Active fire barrier assemblies. Part 1 Specification

EN 949:1999 : Determination of the resistance to soft and heavy body impact for doors

BS 5234-2, Partitions (including matching linings) – Part 2: Specification for performance requirements for strength and robustness including methods of test

- Twice the Severe Duty (SD) testing in accordance with BS 5234-2 on a 32 lineal metre specimen of height 4.57 metres.
- Testing performed prior to cyclic testing and after cyclic testing with the Fire Curtain being able to maintain its integrity and being able to operate up and down.

### Response time and true gravity fail safe operation

BS 8524-1 : 2013 : Clause 5.4 : Active fire barrier assemblies. Part 1 Specification

- Test to ensure that operating speed is within 0.06 - 0.15 m/sec under ALL operating scenarios.
- Testing must confirm operation with power available.
- Gravity fail safe operation must be tested against the loss of primary power (mains), loss of secondary power (batteries), cable disconnection and cable corruption (short circuit) and all combinations of these.

## 1.5 Submittals

### Certification

Test or assessment reports from NATA accredited agencies are required to be submitted for all items outlined in Section 1.4 of this specification

### Shop drawings

Detailing the location, size, requirements 'by others' and design of the Fire Curtains shall be submitted to the General Contractor and the drawings approved prior to the commencement of the manufacture process.

### Samples

300mm long samples of bottom tray and side guides (open design only) including the required finish for the project are to be submitted for approval prior to the commencement of the manufacture process. It is not possible to change the raw material or design of the product; however, the applied finish is to be approved or amended through this process.



### **Inspection and test plan**

Provide a detailed Inspection and Test Plan which outlines the required hold points and compliance checks from order through to handover to ensure that this specification and the requirements of the manufacturer and third party product certifier are met.

### **Completion certificate**

Issue a completion certificate at the completion of the works confirming that the installation has been completed in accordance with this specification, the fire engineering report and the tested prototypes for the Fire Curtain.

### **Operation and maintenance manual**

Electronic copy of operation and maintenance manual including commissioning data for each Fire Curtain and As Built drawings.

## **1.6 Quality Assurance**

### **Product Certification**

Factory Production Control (FPC) is of vital importance to ensure that the products manufactured as equivalent in the materials used and manner of construction to that of the tested prototypes. This is to ensure that the products that leave the factory match the Tested performance in Section 1.4 of this specification. The FireMaster® Concertina™ Fire Curtain shall have certification and listing with an independent accredited certification body operating a Level 5 certification scheme as defined in ISO Guide 65, and in accordance with EN 45011, that conducts regular FPC surveillance visits to the manufacturer.

[Coopers FireMaster® Concertina™ Third Party Product Certification Certificate](#)

### **Management Systems**

The manufacturer shall operate and be certified to ISO 9001 for quality management systems, and ISO 14001 for environmental management systems.

[Coopers Fire ISO 9001 Certificate of Approval](#)

[Coopers Fire ISO 14001 Certificate of Approval](#)

## **1.7 Warranty**

Coopers Fire Limited warrants that its FireMaster® Fire Curtain is free from manufacturing defects for a period of not less than 12 months from installation and commissioning when installed, maintained and used in accordance with Coopers specifications and operational manuals.

## **1.8 Inspections**

### **Pre-installation meeting**

Hold a meeting at the project site with the Owner, Architect, Fire Engineer, General Contractor, fire curtain sub-contractor, mechanical sub-contractor, electrical sub-contractor, fire sub-contractor and ceiling/fitout sub-contractor to review the Fire Curtain requirements.

Review this specification, fire engineering report, substrate conditions, requirements of related work, installation methodology, storage and handling procedures, protection measures and commissioning requirements. Document the responsibilities of each party.

### **Notice**

Give notice so that inspection may be made of the following:

- Correct operation of the Fire Curtain, before being concealed.
- Witness testing of automated Fire Curtain with activation from fire alarm and in conjunction with any other services or functionality. To be witnessed by the Fire Engineer, Architect and General Contractor.
- Fire brigade inspection.



## 2 Product

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### 2.1 Manufacturer

Coopers Fire Limited - Edward House, Penner Road, Havant, HANTS PO9 1QZ, England  
Tel: +44 23 9245 4405, Fax: +44 23 9249 2732, Email: [info@coopersfire.com](mailto:info@coopersfire.com), Web: [www.coopersfire.com](http://www.coopersfire.com)

### 2.2 Supplier

#### Australia and New Zealand

Greene Fire Pty Limited – Level 2, 381 Port Hacking Road, Caringbah NSW 2229, Australia  
Tel: (02) 9526 3100 (Int'l +61 2 9526 3100), Fax: (02) 9526 3111 (Int'l +61 2 9526 3111)  
Email: [sales@greenefire.com.au](mailto:sales@greenefire.com.au), Web: [www.greenefire.com.au](http://www.greenefire.com.au)

### 2.3 Location

Coopers FireMaster® Concertina™ fire curtains are to be installed in the locations shown on the Architectural drawings.

|           |                     |       |
|-----------|---------------------|-------|
| <b>B.</b> | Drawing References: | ..... |
| <b>C.</b> | Summary Location:   | ..... |

### 2.4 Product Description

#### Coopers FireMaster® Concertina™ Fire Curtain

An electrically operated FireMaster® Concertina™ Fire Curtain is able to fire protect around the perimeter of a void or space to create a concealed, continuous barrier as a fire separating element.

The Fire Curtain comprises of zinc anneal mild steel headbox, tubular Gravity Fail Safe DC geared motor with brake, fire resistant fabric, zinc anneal mild steel bottom tray, sprocket and chain, drive shaft, motor controller, power and fire zone controller incorporating battery backup. Where the Fire Curtain creates an open shape and connects to a fire wall a zinc anneal mild steel side guide is required.

The fabric, when installed, forms one continuous barrier around the complete opening. Corners or joins in the fabrics are studded together in a fabric pocket, providing complete separation from one side of the barrier to the other.

The Fire Curtain shall be constructed from pleats. The material keeps the memory of the folds as manufactured. As the bottom tray deploys these pleats unfold. During retraction of the curtain the pleats will neatly fold back to their stored position.

### 2.5 Operation

The Fire Curtain will remain retracted within its headbox until it is automatically activated by the fire alarm signal. Upon activation the Fire Curtain will deploy by gravity to its fire operation position, completely closing the opening and creating a fire compartment.

In the event of mains power failure, they remain retracted using their own dedicated battery back-up power supply for a predetermined period (nominally 30 minutes). If signalled to descend during this period, they fail-safe by gravity in a controlled manner to their fire operational position. At the end of the pre-determined time delay they fail-safe by gravity in a controlled manner. This safety feature is essential to avoid dangerous guillotine/ free-fall deployment. Battery backup is a function to reduce nuisance activations of the Fire Curtain.

Once the fire alarm signal is restored the FireMaster® Concertina™ Fire Curtain is manually reset by pressing the reset button on its control panel.

### 2.6 System Components

#### Headbox

The fire curtain is concealed in a zinc anneal mild steel headbox of not less than 1.5mm thickness which



provides protection for the barrier (curtain) and acts as a fixing element to the building structure. This can be powder coated to a standard RAL colour. There are three headbox types:

- FM 35/22 – standard headbox which is 350mm wide and 225mm high for drop height up to 4 metres
- FM 35/35 – standard headbox which is 350mm wide and 350mm high for drop height up to 6 metres
- FM 22/28 – narrow profile headbox which is 220mm wide and 280mm high for drop height up to 4 metres

|           |                     |                       |                  |
|-----------|---------------------|-----------------------|------------------|
| <b>D.</b> | Headbox type:       | <b>FM</b> .....       | / .....          |
| <b>E.</b> | Powder coat finish: | <b>Yes / No</b> ..... | <b>RAL</b> ..... |

### Bottom Tray

The bottom tray assembly is attached to the lower edge of the fabric, and acts to keep the fabric hanging vertical when the curtain is in the lowered position, minimising deflection due to air currents. The bottom tray must form one continuous section when installed. The bottom tray is zinc anneal mild steel of not less than 1.5mm thickness and can be powder coated to a standard RAL colour. It is tested up to 10kg/m.

FM 35/22 and FM 35/35 headboxing uses a 300mm wide bottom tray. FM 22/28 uses a 170mm wide bottom tray. The bottom tray sits into the profile of the headbox with a 5mm shadow gap either side.

|           |                     |                       |                  |
|-----------|---------------------|-----------------------|------------------|
| <b>F.</b> | Powder coat finish: | <b>Yes / No</b> ..... | <b>RAL</b> ..... |
|-----------|---------------------|-----------------------|------------------|

### Side Guides

Side guides are only required where the FireMaster® Concertina™ Fire Curtain creates an “open” shape around. That is that the ends of the Fire Curtain start and end at a fire wall. If the FireMaster® Concertina™ Fire Curtain completely encompasses a void and creates a “closed” shape, side guides are not needed.

Where required, the side guide assembly is zinc anneal mild steel of not less than 1.5mm thickness and is a side fixing element to the building structure. This can be powder coated to a standard RAL colour.

The Fire Curtain fabric is restrained at the sides in the side guides, which prevents fire spread at the sides.

FM 35/22 and FM 35/35 headboxing uses a 350mm wide and 75mm deep side guides. FM 22/28 uses a 170mm wide and 75mm deep side guides.

|           |                     |                            |                  |
|-----------|---------------------|----------------------------|------------------|
| <b>G.</b> | Side Guides:        | <b>Yes / No</b> .....      |                  |
| <b>H.</b> | Powder coat finish: | <b>Na / Yes / No</b> ..... | <b>RAL</b> ..... |

### Fabric

Fabric type is EFP™ 4/1000, a glass fibre, stainless steel wire reinforced, fabric coated with a micronized aluminium filled fire retardant polyurethane to both sides, nominal 690 g/m<sup>2</sup>. The fabric is manufactured in strips and is tested in the vertical orientation including the sewing yarns.

The fabric is constructed in strips forming a pleated design. These are stitched together horizontally. The corners are stitched and folded to create any angle from 60° to 180° incorporating a fabric pocket to join the fabrics together forming one continuous barrier.

### Motor

Motors shall meet all applicable safety standards. Motors shall operate at 24Vdc and contain the necessary drive mechanisms, a mechanical epicyclical gearbox retarder, automatic overload protection and both automatic and manual distance travel positioning, linked to an internal 24Vdc electromagnetic brake with regenerative braking system. When Motors are retracted their internal drive motor shall be isolated from all power and the barrier shall be held in position by an internal electromagnetic brake. This ensures the barriers not drift upward or downward.

The barrier assemblies shall have true fail-safe by gravity, in accordance with BSI PAS 121, and be able to move to their fire operational position even in the event of open or closed circuit wiring, or total system corruption, with controlled braking system and drive mechanisms. All working parts shall be totally enclosed and protected within the steel enclosure and shall be tested as part of the complete assembly for fire resistance. Additionally, the motor(s) shall be tested for operation at temperatures of 400 °C as required by BS 8524-1.





The motor is required to have short circuit protection. This requires that the motor will still operate and default down by gravity if the motor cabling has any short circuit.

Motors do not use mechanical top or bottom limits to stop the Fire Curtain to reduce maintenance costs. To enable easy maintenance the motor(s) shall be positioned and mounted outside the headbox. The motor(s) must be able to be mounted on either vertical face or the top face to suit site conditions.

**Controls**

The control system of the Fire Curtain is designed as a standalone system and is automated in the building by the connection of the project power and alarms. As such the control panel must be tested and approved by an Independent Third Party authority to confirm that it performs the function stated by the manufacturer.

Coopers Battery Back-Up – Controls Grouped (BBU-CG) or Emergency Retract Unit – Controls Grouped (ERU-CG) control panels are to be provided. Both control panels incorporate battery backup functionality. Battery backup is a function to reduce nuisance activations of the Fire Curtain and will hold the curtain open for 30 minutes on loss of mains power.

ERU-CG will be supplied if any additional control functions from Section 2.7 of this specification are incorporated. Otherwise BBU-CG will be supplied.

**2.7 Additional Functions (where required)**

**Suspended framework**

Threaded rod and unistrut frame work system is to be installed at 700mm pitching along the length of the Fire Curtain and at all nominated locations by the manufacturer. The design of this framework is to be as approved in the fire resistance approvals to AS1530.4 as a suitable installation method.

|    |                      |                                      |
|----|----------------------|--------------------------------------|
| I. | Suspended framework: | <b>Required / Not Required</b> ..... |
|----|----------------------|--------------------------------------|

**Bulkhead Batt fire rating above headbox**

Where suspended framework is required and the section above the Fire Curtain is concealed, a Bulkhead Batt fire system is required. This system allows for fire rating up to - / 240 / 240 and compliance with BCA Specification C3.15 and AS4072.1 dependant on the fire rating of the adjacent substrate and the penetrations going through the barrier.

For suspension up to 600mm a single layer Bulkhead Batt is to be installed to the approved details of the manufacturer. Suspended framing from 600mm up to 1200mm is a double layer Bulkhead Batt installed in the required installation detail by the manufacturer of the Fire Curtain.

Service penetrations are to be fire protected in accordance with the requirements of the Bulkhead Batt manufacturer. Refer to the manufacturer or supplier for further details.

[Bulkhead Batt datasheet](#)

**Fabric barrier fire rating above headbox**

Where suspended framework is required and the section above the Fire Curtain can be uninsulated, a static fabric barrier can be installed. The use of the static fabric barrier is addressed in the fire engineering report.

|    |                            |   |
|----|----------------------------|---|
| J. | Above headbox fire rating: | <b>Substrate / Bulkhead Batt / Fabric Barrier</b> |
|----|----------------------------|---|

**Light Warning**

This is a visual alert. A red flashing light will flash whilst the curtain is down or coming down. This will be located adjacent to the Fire Curtain on one or both sides as nominated in this specification. See datasheet (VS6-LWC).

|    |                |                                      |
|----|----------------|--------------------------------------|
| K. | Light Warning: | <b>Required / Not Required</b> ..... |
| L. | Location:      | .....                                |



### Voice Warning

This is an audio and/or spoken multi message facility. The unit can give one customised up to 16 second message relayed when the curtain system activates or two 8 second customised messages relayed at different system events e.g. one message when the curtain activates and a different message when emergency retract is used. The default message is "Warning, fire curtain descending". The Voice Warning will only be audible in the vicinity of the Fire Curtain and will not interfere with the building's Occupant Warning System (EWIS). See datasheet (VS6-VWR or VS6-VWC)

|                          |                                      |
|--------------------------|--------------------------------------|
| <b>M.</b> Voice Warning: | <b>Required / Not Required</b> ..... |
|--------------------------|--------------------------------------|

### Split Drop Delay

Upon activation the Fire Curtain must partially descend to a predetermined height to permit preliminary escape and initial smoke containment. After a time delay the Fire Curtain descends to the full fire operational position. The set hold open height will be accurate to ±50mm and the hold open time will be accurate to ±2 seconds.

|                             |                                      |
|-----------------------------|--------------------------------------|
| <b>N.</b> Split Drop Delay: | <b>Required / Not Required</b> ..... |
| <b>O.</b> Hold Open Height: | ..... <b>mm</b>                      |
| <b>P.</b> Hold Open Time:   | ..... <b>seconds</b>                 |

### Dual Drop

Upon activation (e.g. smoke detection) the Fire Curtain must partially descend to a predetermined height to permit preliminary escape and initial smoke containment. On secondary activation (e.g. heat detection) the Fire Curtain descends to the full fire operational position. There can also be an overall time delay which will be deploy the Fire Curtain after this amount of time if the secondary activation device has not activated. The set hold open height will be accurate to ±50mm and the override time will be accurate to ±2 seconds.

|  |                                      |
|--|--------------------------------------|
| <b>Q.</b> Dual Drop:                   | <b>Required / Not Required</b> ..... |
| <b>R.</b> Hold Open Height:            | ..... <b>mm</b>                      |
| <b>S.</b> Secondary activation device: | .....                                |
| <b>T.</b> Override Time:               | ..... <b>seconds</b>                 |

### Obstruction Warning System

The Obstruction Warning System monitors the opening protected by a fire curtain to ensure the opening is kept clear. If the opening is obstructed for longer than the time allowed (normally 5 minutes) the system will be activated. This system requires a Light Warning and/or Voice Warning to notify of the obstruction. The default Voice Warning message is "Warning, please remove obstruction". Once the obstruction has been removed the system notification warning stops automatically and the system reverts to monitor mode. See datasheet (VS6-OWS-C).

Multiple ceiling mounted sensors are required to be installed in the adjacent ceiling. Each sensor can detect a wide of approximately 2.4m and come in either flush mount or face mount installation options.

|                                       |                                       |
|---------------------------------------|---------------------------------------|
| <b>U.</b> Obstruction Warning System: | <b>Required / Not Required</b> .....  |
| <b>V.</b> Sensor Type:                | <b>Flush Mount / Face Mount</b> ..... |

### Building Management System Outputs

The status of the fire curtain system can be monitored by the building management system with the following outputs that can be monitored:

- Mains power status
- Alarm status
- Battery condition
- Curtain Up
- Curtain Down
- Curtain fault





Each output from the control panel is supplied as a normally closed or normally open dry connect for connection to the BMS system by others. If 24Vdc output is required please contact the manufacturer.

W. Building Management Outputs: **Required / Not Required** .....

**Side Guide Door Closers**

Automatic door closers can be provided to the front of the side guides for the FM 22/28 headbox. They cannot be provided to the FM 35/22 or FM 35/35 headbox.

On activation the doors open. After a short delay of 3 seconds, the Fire Curtain deploys. Once the Fire Curtain is retracted the doors are manually closed to the electromagnetic hold close device.

Side guide door closers are zinc anneal mild steel of not less than 1.5mm thickness which can be powder coated to a standard RAL colour. They have a concealed auto spring open function with 24Vdc electromagnetic hold close device. The automatic open function is controlled by the control panel and is fail safe open.

X. Side Guide Door Closers: **Required / Not Required** .....  
Y. Powder coat finish: **Yes / No** ..... **RAL** .....

**Bottom Tray Ceiling Interface**

A 3mm thick aluminium ceiling interface is to be applied to the bottom tray. This bottom tray will provide an architectural finish to the system. The ceiling interface can be powder coated to a standard DULUX colour.

Z. Ceiling Interface: **Required / Not Required** .....  
AA. Powder coat finish: **Yes / No** ..... **DULUX** .....

**Signage**

Signs must be installed on each side of the fire curtains located over the opening stating:

WARNING – AUTOMATIC FIRE CURTAIN  
DO NOT OBSTRUCT

The words "WARNING - AUTOMATIC FIRE CURTAIN" must be in capital letters not less than 50mm high in a colour contrasting with the background and "DO NOT OBSTRUCT" must be in capital letters not less than 20mm high.

AB. Signage: **Required / Not Required** .....  
AC. Wording: .....  
AD. Location: .....

**Curtain Signage**

Signage is to be provided direct to the Fire Curtain. The signage is to be printed with black text onto a piece of EFP™ 2/600/T fabric which is direct fixed to the Fire Curtain in the nominated location.

AE. Curtain Signage: **Required / Not Required** .....  
AF. Wording: .....  
AG. Location: .....

**2.8 Product Performance:**

The complete FireMaster® Concertina™ Fire Curtain inclusive of headbox, motor, fabric and bottom tray is to be tested or assessed to the requirements outlined in Section 1.4 of this specification. A summary of this performance is:



- FRL of -/120/- to AS1530.4 for sizes up to unlimited length and drop height of 6 metres. There can be unlimited sides with each side up to 30 metres long, unlimited corners with each corner being 60 - 180° angle.
- Air (smoke) leakage not exceeding 0.5 m<sup>3</sup>/m<sup>2</sup>/hr at 25Pa through the fabric when tested to AS1530.7
- 1,000 cycle testing without maintenance or adjustment on a 32 lineal metre by height 4.57 metres Fire Curtain to BS8524-1
- Twice the Severe Duty (SD) testing in accordance with BS 5234-2 on a 32 lineal metre specimen of height 4.57 metres
- Test to ensure that operating speed is within 0.06 - 0.15 m/sec for all operating modes, power available and true gravity fail safe to BS8524-1

## 2.9 Labelling

The Coopers FireMaster® Concertina™ Fire Curtain must be labelled with a metal tag riveted to the bottom tray clearing showing the Fire Curtain details, manufacturer, installation date and FRL.

# 3 EXECUTION

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## 3.1 Installation

Coopers FireMaster® Concertina™ Fire Curtain shall be installed by manufacturer trained and Approved Installers in strict adherence with the manufacturer's guidelines and the advice (if required) of their official representative.

Ensure that the structure being fixed to is suitably fire rated and to the manufacturer's specifications.

All Coopers FireMaster® Concertina™ Fire Curtains shall be carefully located in the positions indicated on the approved Shop Drawings in perfect alignment, plumb, level, straight and true.

Adjust the active fire curtain barrier assemblies to provide uniform clearances and smooth non-binding operation.

Install all wiring to active fire curtain barrier assemblies in strict accordance with the manufacturers written instructions and AS/NZS 3000:2007 Wiring Rules.

## 3.2 Commissioning

The installer shall perform suitable tests to ensure that the Coopers FireMaster® Concertina™ active fire curtain barrier assemblies operate in accordance with the Contract Documents and this specification.

Complete interface testing shall be performed between all associated trades to ensure that the Coopers FireMaster® Concertina™ active fire curtain barrier assemblies work correctly in fire mode. At a minimum this will be between the fire alarm/s and active fire curtain barrier assemblies.

## 3.3 Maintenance

The Coopers FireMaster® Concertina™ active fire curtain barrier assemblies shall be included in the required Fire Safety Measures for the building and must be maintained in accordance with the manufacturer's recommendations. At a minimum the active fire barriers shall be inspected and maintained in accordance with AS1851 (2012) Section 13 which requires 6 monthly intervals. Maintenance and inspections shall be performed by fully trained and competent technicians.