# PRODUCT SPECIFICATION

FireMaster®

## 1 GENERAL

### 1.1 Scope

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

### 1.2 Design Criteria

The designer must consider the following:

- Structural movement of the building
- Building tolerance
- Fire resistance requirements
- Activation requirements for the fire barriers
- Optional items that are required with the product
- Maintaining the area underneath the curtain as clear from obstructions

### 1.3 Related Works

Co-ordination is required with the following trades:

- Structure – Steel or formwork
  Headbox must be installed level to 2mm tolerance across the entire width of the headbox
- Ceilings & Partitions
- Floor
- Handrails/balustrades
- Electrical – 240V 20A power supply to each curtain controller
- Dry Fire – Normally closed volt free alarm signal to each curtain controller

### 1.4 Submittals

Shop drawings detailing the location, size, requirements 'by others' and design of the Coopers FireMaster® Fire Curtains shall be submitted to the Principal Contractor and the drawings approved prior to the commencement of the manufacture process.

If required in the architectural specification, samples of the fabric and components will be delivered to the Principal Contractor on request.

### 1.5 Quality Assurance

Materials and work shall conform to the latest edition of reference specifications and the manufacturer shall implement and operate an approved Quality Assurance system for the product, complying with the requirements of ISO 9001: 2008.

### 1.6 Relevant Standards

Coopers FireMaster® automatic fire barriers have been tested by an approved industrial research and testing organisations registered by the National Association of Testing Laboratories (NATA) to the following Standards:

- AS/NZS 1530.3: 1999 : Methods for fire tests on building materials, components and structures - Simultaneous determination of ignitability, flame propagation, heat release and smoke release
- AS 1530.4: 2005 : Methods for fire tests on building materials, components and structures - Fire-resistance test of elements of construction
- BS EN 949:1999 : Windows and curtain walling, doors, blinds and shutters. Determination of the resistance to soft and heavy body impact for doors
- ISO 9001: 2008: Quality management systems



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## 1.7 Warranty

Coopers Fire Pty Limited warrants that its FireMaster® Fire Curtains are free from manufacturing defects for a period of not less than five (5) years when installed, maintained and used in accordance with Coopers specifications and operational manuals.

# 2 Product

## 2.1 Approved Manufacturer

Coopers Fire Pty Limited
Unit 4 36-44 Atkinson Road, Caringbah NSW 2229, Australia
Tel: +61 2 9526 3100, Fax: +61 2 9526 3111
Email: info@coopersfire.com.au, Web: www.coopersfire.com.au

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, Web: www.coopersfire.com

## 2.2 Location

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

## 2.3 Proprietary Item

Coopers FireMaster® Fire Curtains including

- Galvanised mild steel headbox, tubular Gravity Fail Safe DC geared motor with brake, fire resistant fabric, galvanised mild steel bottom bar, galvanised mild steel side guide with adjustment channel, intermediate roller supports, motor controller, power and fire zone controller incorporating battery backup
- Complete product testing to AS 1530.4(2005) to an FRL of -/240/- clearly showing the maximum allowable size for the curtain and this maximum size shall not be less than the installed sizes required.
- Complete product testing and certification to AS/NZ 1530.3(1999) with an index rating not greater than:
  Ignitability – 0  Spread of Flame – 0  Heat Evolved – 0  Smoke Developed – 3

## 2.4 System Components

### 2.4.1 Headbox

The fire curtain is concealed in a galvanised mild steel headbox of not less than 1.2mm 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 DULUX colour.

### 2.4.2 Motor

The motor consists of a 24V DC motor inclusive of the required internal gears and torque to lift the curtain and descend at the required speed. It will also have a separate 24V DC brake which will hold open the curtain drawing minimal power. The motor must allow for the curtain to descend at the required speed when all consumable power sources are removed (Gravity Fail Safe).

Internal travel or limit switches are not to be incorporated within the motor system that requires ongoing service and maintenance. The motor is required to be instructed when to stop from the controls.

### 2.4.3 Fabric – Coopers EFP™ 4/1000

The curtain material is a satin weave fibreglass fabric with a silver polyurethane coating on both sides and integral stainless wire. It is 0.54mm thick, and weighs approximately 690g/m² in its finished form. The fabric is manufactured in widths of approximately 1.9m and is tested in the vertical orientation including the sewing yarns.

### 2.4.4 Barrel Assembly

As a single barrel construction where maximum dimensions are assessed by a NATA accredited laboratory as 30m width x 9m height for FRL -/120/- and 6m high for FRL -/240/-. Additionally, Fire Curtainss that are overlapped and conjoined are assessed by a NATA accredited laboratory as 30m width x 9m height for FRL -/120/- and 6m high for FRL -/240/- where barrel widths are <5m width. All barrels are fabricated of structural quality ERW galvanized steel seamless roller tube of minimum 70mm diameter with a wall thickness of not less than 1.5mm.

### 2.4.5 Bottom Bar

The bottom bar assembly is attached to the lower edge of the fabric, and acts to keep the fabric hanging vertical and taut when the curtain is in the lowered position, minimising deflection due to air currents. The bottom bar



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must form one continuous bar when installed. The bottom bar is galvanised mild steel and can be powder coated to a standard DULUX colour. It is tested up to 10kg/m.

### 2.4.6 Side Guides with adjustment channels

The fabric is withheld in a galvanised mild steel guide section, one either end of the fire curtain, of not less than 2mm thickness. The side guide needs to be tested as part of the complete system and provide the required fire separation. An adjustment channel is used to provide an adjustable fixing back to the adjacent fire rated structure. The side guide and adjustment channel can be powder coated to a standard DULUX colour.

### 2.4.7 Controls

The fire curtains will be capable of operation as an integrated part of the Smoke Control and Fire Management System, with power supply units complete with battery backup and alarm interface panels.

The system shall be fully protected and fail-safe by 'Gravity', meeting the requirements of ASB3 (moving to the fire operational position in a controlled manner when all consumable primary and auxiliary power sources are removed, in the event the wiring or system corruption, or any combination thereof) and thereby avoiding the need for fire rated cabling.

The system shall descend by gravity and drive up with mains power available. In the event of mains power failure, the system shall remain retracted using its own dedicated battery backup power supply for a predetermined period (usually 30 minutes).

If signalled to descend during this period the barrier will move to its fire operational position. At the end of the predetermined time delay the barrier must descend under fail-safe by 'Gravity' with a controlled and adjustable rate of descent. This safety feature is essential to avoid dangerous guillotine/free-fall descent.

The speed of descent will be synchronised between barriers within the range of 0.06m/s to 0.15m/s. All speed controls must show appropriate testing by a notified body and must be site adjustable without altering bottom bar mass.
See datasheet (VS6-BBU-CAM or VS6-BBU-CG)

## 2.5 Product Performance:

The complete FireMaster® Fire Curtains product inclusive of headbox, motor, fabric, bottom bar, side guide and adjustment channel is to be tested or assessed to AS1530.4 (2005) achieving an FRL of -/240/- clearly showing the maximum allowable size for the curtain and this maximum size shall not be less than the installed sizes required.

The fabric must be tested to AS/NZ 1530.3(1999) with an index rating not greater than:
Ignitability – 0 Spread of Flame – 0 Heat Evolved – 0 Smoke Developed – 3

The complete system is to be designed to operate for a minimum 1,000 cycles at normal ambient temperatures in the range from 0ºC to 60ºC, and to withstand fire at temperatures up to 1000 ºC for over 120 minutes once only.

## 2.6 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.

Once the fire alarm signal is restored the FireMaster® Fire Curtain is manually reset by pressing the reset button on its controller. This can be amended to automatic reset if requested. Multiple roller Fire Curtains must incorporate a 30 second delay before resetting if automatic reset is requested.

## 2.7 Labelling

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



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## 2.8 Optional Components

### 2.8.1 Visual Alert

A red local flashing light will flash whilst the curtain is down or coming down.
See datasheet (VS6-LWC)

### 2.8.2 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”
See datasheet (VS6-VWR)

### 2.8.3 Emergency Retract

A push button retract facility is required for escape and emergency service access. Once pressed, the curtain will retract to its top position, hold for a specified time duration (usually 10 seconds) then deploy again to its fire operational (down) position. This will allow for the temporary hold open of the curtain for evacuation/egress, and then revert back to its fire separating position.

When specified the controls need to be respecified to require an Emergency Power Supply unit. The emergency power supply unit will be able to provide an available power source during fire mode which can retract the curtain without any external services (i.e. power). This system also come as standard with the battery backup supply. All control cabling needs to be upgraded to fire rated.
See datasheet (VS6-ERU-CAM or VS6-ERU-CG) & (VS6-ERR or VS6-ERDL)

### 2.8.4 Split Drop Delay

Upon activation the automatic fire barrier must partially descend to a predetermined height to permit preliminary escape and initial smoke containment. After a time delay the barrier (curtain) descends to the full fire operational position.

### 2.8.5 Dual Drop

Upon activation (e.g. smoke detection) the automatic fire barrier must partially descend to a predetermined height to permit preliminary escape and initial smoke containment. On secondary activation (e.g. heat detection) the barrier (curtain) descends to the full fire operational position.

### 2.8.6 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 incorporates a Visual Alert and/or Voice Warning with the default warning message “Warning, please remove obstruction”
See datasheet (VS6-OWS-C)

### 2.8.7 Building Management System Outputs

The status of the fire curtain system can be monitored by the building management system with the optional BMS outputs. The following will be monitored:

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

# 3 EXECUTION

## 3.1 Installation

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



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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® Fire Curtains 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® Fire Curtains work correctly in fire mode. At a minimum this will be between the fire alarm/s and automatic fire barriers.

## 3.3 Maintenance

The Coopers FireMaster® Fire Curtains 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 automatic 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.



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