

PRODUCT SPECIFICATION

FireMaster® Plus NVS™ Horizontal Simplex™

1 GENERAL

1.1 Scope

Coopers FireMaster® Plus NVS™ Horizontal Simplex™ 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® Plus NVS™ Horizontal Simplex™ 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® Plus NVS™ Horizontal Simplex™ 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
- ISO 9001: 2008: Quality management systems

1.7 Warranty

Coopers Fire Pty Limited warrants that its FireMaster® Plus NVS™ Horizontal Simplex™ 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

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Email: info@coopersfire.com, Web: www.coopersfire.com

2.2 Location

Coopers FireMaster® Plus NVS™ Horizontal Simplex™ fire curtains are to be installed in the locations shown on the Architectural drawings.

2.3 Proprietary Item

Coopers FireMaster® Plus NVS™ Horizontal Simplex™ Fire Curtains including

- Galvanised mild steel boxing, tubular Gravity Fail Safe DC geared motor with brake, fire resistant fabric, galvanised mild steel bottom bar, galvanised mild steel side guide boxing, guidance wheels, pulleys including metal strapping, motor controller, power and fire zone controller incorporating battery backup and emergency power supply
- The boxing fixes back to the building structure and frames the horizontal opening that is to be fire protected. All components required to support, or allow the operation of the horizontal fire curtain will be within the mild steel boxing and there will be NO SUPPORTS between the boxes. Specifically there will be no support wires that cross the void to support or operate the fabric when the curtain is deployed.
- Complete product testing and certification to AS 1530.4(2005) to an FRL of -/120/- clearly showing the maximum allowable size for the curtain and this maximum size shall not be less than the installed sizes required.
- The complete product must meet the radiation criterion of 10kW/m² at 365mm as tested in AS1530.4(2005) for a period of not less than 60 minutes when measured at the centre of the curtain.
- Maximum size of the product is 4 meters width x 5 meters draw
- Complete product testing and certification to AS/NZ 1530.3(1999) with an index rating not greater than:
Ignitability – 16 Spread of Flame – 0 Heat Evolved – 3 Smoke Developed – 6

2.4 System Components

2.4.1 Fabric Roller Boxing

The fire curtain is concealed in a galvanised mild steel headbox of size 400mm x 225mm x 1.2mm thick 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.

2.4.2 Receiver Boxing

The receiver boxing houses the parts of the pulley and strapping system and provides a location for the bottom bar to close to when activated. It is a 250mm x 225mm x 1.2mm thick galvanised mild steel boxing 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.

2.4.3 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.

2.4.4 Fabric – Coopers EFP™ 2/1000/BI

The curtain material is a continuous filament glass fibre and stainless steel wire fabric with fire retardant intumescent graphite flake silicone coating. It is 2mm thick, and weighs approximately 1.64kg/m² in its finished form. The fabric is manufactured in widths of approximately 1.5m and is tested in the vertical and horizontal orientation including the sewing yarns.

2.4.5 Barrel Assembly

As a single barrel construction where maximum dimensions are assessed by a NATA accredited laboratory as 4m width x 5m draw. 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.

2.4.6 Bottom Bar

The bottom bar assembly is attached to the lower edge of the fabric, and acts to keep the fabric taut, allowing correct operation of the curtain and minimising deflection. The bottom bar must form one continuous bar when installed. The bottom bar is galvanised mild steel and can be powder coated to a standard RAL colour.

2.4.7 Side Guide Boxing

The fabric is withheld in a galvanised mild steel guide section which are within side guide boxing housing of size 150mm x 225mm x 1.2mm thickness. The side guide needs to be tested as part of the complete system and provide the required fire separation and acts as a fixing element to the building structure. The side guide boxing can be powder coated to a standard RAL colour.

2.4.8 Controls

The barrier assemblies shall move to their fire operational position in a controlled manner, and shall be reliant upon a primary and auxiliary Battery Back Up (ERU) system in the event of a total mains failure. The auxiliary Battery Back Up (BBU-ERU) system shall be connected to an independent and maintain power circuit (provided by others) from the primary unit.

The barrier assemblies must commence movement upon initiation and move to the fire operational position with velocities within the range of 0,06 m/s to 0,3 m/s using the unique VarioSpeed™ function. Speeds may be dictated by those authorities having jurisdiction for 'safety in use' according to the location, nature or function of each unit.

The barrier assemblies must show the ability to operate with the barrier retained in side channels to resist pressure (as standard 20 Pa and 'ad-hoc' impact using a 50Kg weight dropped from a height of 1 m at the end of the fire-resistance test.

The barrier assembly shall have fail-safe with controlled braking system and drive mechanisms. All working parts shall be totally enclosed and protected within the steel roller and shall be tested as part of the complete assembly for fire resistance.

Any combination of the alarm/control signal provided by the Electrical Subcontractor, and/or the specified fail-safe functions shall activate the system.

See datasheet (VS6-ERU-CG-HORIZ)

2.5 Product Performance:

The complete FireMaster® Plus NVS™ Horizontal Simplex™ product inclusive of fabric roller box, receiver box, side guide boxing, motor, fabric, and bottom bar is to be tested or assessed to AS1530.4 (2005) achieving an FRL of -/120/- clearly showing the maximum allowable size for the curtain and this maximum size shall not be less than the installed sizes required. The maximum size being 4 meters wide x 5 meters draw.

The complete product must meet the radiation criterion of 10kW/m² at 365mm as tested in AS1530.4(2005) for a period of not less than 60 minutes.

The fabric must be tested to AS/NZ 1530.3(1999) with an index rating not greater than:
Ignitability – 16 Spread of Flame – 0 Heat Evolved – 3 Smoke Developed – 6

The complete system is to be designed to operate for a minimum 1,000 cycles at normal ambient temperatures in the range from 0°C to 60°C, and to withstand fire at temperatures up to 1000 °C 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 move to its fire operation position, completely closing the opening and creating a fire compartment.

Once the fire alarm signal is restored the FireMaster® Plus NVS™ Horizontal Simplex™ Fire Curtain is manually reset by pressing the reset button on its controller. This can be amended to automatic reset if requested..

2.7 Labelling

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

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 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® Plus NVS™ Horizontal Simplex™ 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® Plus NVS™ Horizontal Simplex™ 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® Plus NVS™ Horizontal Simplex™ 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® Plus NVS™ Horizontal Simplex™ 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® Plus NVS™ Horizontal Simplex™ 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.