

SECTION 08 33 44  
FIRE PROTECTIVE SMOKE CURTAIN

**PART 1 – GENERAL**

1.01 SUMMARY

A. Section Includes:

1. Division 5 Section "Metal Fabrications" for supplementary metal members supporting smoke curtain systems to structure.
2. Division 26 Sections for electrical wiring and connections and for smoke curtain machines.
3. Division 28 Section "Fire Alarm" for connections of fire protective smoke curtain to fire alarm, UL 864 label required.

B. Products Furnished Under This Section:

1. This Section includes Fire Protective Smoke Curtains -
2. Model Number- SD240GS® Fire Protective smoke Curtain as manufactured by US Smoke & Fire® -BLE

C. Related Requirements:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 REQUIRED TEST REPORTS & MINIMUM PERFORMANCE STANDARDS - Intertek Label Requirement for Fire Protective Smoke Curtains

A. Required Testing Reports, Label Requirements, and Minimum Performance Standards:

1. Tested to UL 10D- 90 Minutes
2. Tested to UL 1784, Air Leakage test
3. UL 864 -UL listed Control units for Fire Alarm Systems.
4. The system shall always operate under the power of gravity to prove correct gravity fail-safe capability.

1.03 SUBMITTALS

A. Product Data:

1. For each type of product indicated.

B. Shop Drawings:

1. Show fabrication and installation details for automatic smoke curtains. In-

clude plans, sections, details, attachments to other work, and the following:

- a. Operating clearances.
- b. Requirements for supporting automatic smoke curtains, track, and equipment. Verify capacity of each track and rigging component to support loads.
- c. Locations of equipment components, switches, motors and controls. Differentiate between manufacturer-installed and field-installed wiring.

B. Certification Laboratory Label:

1. For each type of product provide Intertek Certification Laboratory label affixed to Assembly per NFPA 80.

#### 1.04 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data:

1. For fire protective curtains to include in maintenance manuals.

#### 1.05 QUALITY ASSURANCE

A. Overall Standards:

1. Manufacturer shall maintain a quality control program for follow up service.

B. Qualifications:

1. Installers:

- a. A firm or individual with no less than five years on-site installation experience, experienced in installing automatic smoke curtains similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- b. Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

#### 1.06 FIELD CONDITIONS

A. Existing Conditions:

1. Verify rough and clear openings and the dimensions of other construction by

field measurements before fabrication and indicate measurements on shop drawings.

#### 1.07 WARRANTY

##### A. Manufacturer Warranty:

1. Warranty one year on Motors, Motor Controller (MC) and Control Panels (CP) from date of Substantial Completion.

### **PART 2 - PRODUCTS**

#### 2.01 FIRE PROTECTIVE SMOKE CURTAIN

##### A. Manufacturers:

1. US Smoke & Fire®
2. BLE

##### B. Description:

1. Provide SD240GS® Fire Protective Smoke Curtain

##### C. Installer:

1. US Smoke & Fire Corp 888.917.8777 ext102  
[www. Ussmokeandfire.com](http://www.Ussmokeandfire.com)

##### B. Performance/Design Criteria:

1. The curtain head box shall be manufactured from 1.2mm galvanized steel. The enclosure shall be rated at the same temperature as the curtain fabric.
2. Removable cover plates shall be incorporated to allow access to the curtain rollers.
3. Standard head box sizes per manufacturers range. A weighted bottom bar shall be provided to prevent deflection and ensure correct operation under gravity.
4. The roller shall be constructed from a round tube, which will incorporate a 24v Motor and gearbox and a sealed heavy-duty ball bearing assembly.
5. A motor controller housed in a steel enclosure shall up to 100 feet away
6. Provide each motorized curtain with back Electromagnetic force-controlled speed of descent per NFPA 80.
7. The curtain shall be manufactured from wire inserted woven glass fiber fabric. The woven glass fiber fabric shall have a nominal weight of no less than 540g/

square meter.

8.

#### C.Operations

1. The Fire Protective Smoke Curtain shall deploy upon a signal from the fire alarm system in an emergency.
2. The system must be proven to “fail safe” to the operational position on total loss of primary and auxiliary power. The system must contain a housed battery system at the Control Panel.
3. Under normal operating conditions the curtains would be held in the retracted position via the motors operating at stall voltage.
4. Upon activation of the fire alarm the control panel will remove the supply voltage and the curtain shall descend under the power of gravity in a controlled manner. A dynamic braking system housed in the motor control circuit shall control the speed of the descent of the curtain. The descent shall be electronically synchronized on overlapping curtains with a bottom bar.
5. To retract the curtain the control panel shall supply 24v to the motor controller and motors will drive the curtains to the upper position. As the bottom bar hits the curtain head box the motor controller will step back the voltage and current and hold the bottom bar in the retracted position.
6. Control Panel: Provide Control Panel (CP) capable of controlling up to 6 no. 24v motor assemblies. During normal operation, the CP will provide a 24v AC supply to the curtain motor holding them in the retracted position. Should smoke be detected, the fire alarm contact in the CP will be opened by the fire alarm control system, the CP will remove the 24v supply to the curtain motors and the curtains will descend under the power of gravity in a controlled manner.
7. Open on fire- configured to be gravity fail safe
8. Test Facility- required

### **PART 3 - EXECUTION**

#### 3.01 EXAMINATION

- A. Verification of Conditions:

1. Examine areas and conditions, with Installer present, for compliance with requirements for supporting members, blocking, installation tolerances, clearances, and other conditions affecting performance of automatic smoke-curtain work. Proceed with installation only after unsatisfactory conditions have been corrected.
2. Examine inserts, clips, blocking, or other supports to be installed by others to support boxes. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.03 INSTALLATION

- A. Install automatic smoke-curtain system according to manufacturer's written instructions.
- B. Interface with Other Work:
  1. Monitoring relays in the control panel provide BMS contacts for mains failure.

### 3.04 FIELD QUALITY CONTROL

- A. Field Tests and Inspections
  1. Fire alarm testing, the smoke curtain is required to deploy upon a signal from the fire alarm in an emergency. The test to verify deployment shall be conducted in the presence of the authority having jurisdiction per NFPA guidelines.
  2. When a smoke curtain is required to deploy in an emergency, it is probable that the main supply to the control panel may have already failed and that the cables linking the curtains to the control panel might have become damaged. Under these circumstances with no power available the curtain will have to deploy by gravity.
  3. A total power failure should be simulated during each test to ensure gravity fail-safe deployment. A test in which a curtain is powered down under normal test conditions from either main power or the battery supply only proves that the smoke curtain can be deployed when powered. This does not confirm an ability to be gravity fail safe.

### 3.05 CLOSEOUT ACTIVITIES

- A. Demonstration:
  1. Engage a factory-authorized service representative to test system.

B. Training:

1. Engage a factory-authorized service representative to train Owner's Personnel to review operation curtain.

3.06 ANNUAL REQUIRED PREVENTIVE MAINTENANCE REQUIREMENT

- B. This is a high-performance fabric system that requires annual adjustment, maintenance and preventative maintenance service. Engage US Care® factory certified technician to maintain system once per annum per manufacturers operation and maintenance manual for the preventative maintenance service.

END OF SECTION 08 33 44