

SECTION 083343  
STEEL-TEX FIRE SHUTTER

**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 smoke and fire curtain machines to fire alarm per UL 864 label.

B. Products Furnished Under This Section:

1. This Section includes Steel-Tex Fire Shutter (SFS) -
2. SFS Model Number- U.S. Smoke & Fire - Hose Stream 120® Fire Shutter

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 FOR Fire Curtain Shutter and Frame–** Guardian Fire Testing Laboratories Product listing and Labeling Requirement per ISO 17065 by ANSI Accreditation for Fabric Fire Shutter. Testing Laboratory to be IAS Accredited, ISO 17025 Compliant.

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

1. **UL 10B and ASTM E2226** (Hose Stream Test)- Fire test of Fire Door Assemblies listed and labeled for a **two -hour fire wall**.

2. If 3 hour fire rating is required, then install two Hose Stream 120® systems in a back to back orientation, per Harmathy's Principle. NFPA221 table 4.5 states that that two 1-hour walls are equivalent to a single 2-hour wall.

### 1.03 SUBMITTALS

#### A. Product Data:

1. For each type of product indicated.

#### B. Shop Drawings:

1. Show fabrication and installation details for fire curtain shutter. Include plans, sections, details, attachments to other work, and the following:
  - a. Operating clearances.
  - b. Requirements for supporting automatic fire curtain shutter, 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. Samples:

1. For each type of steel-textile from dye lot to be used for the Work, with specified treatments applied, and showing complete pattern and texture repeat, if any. Mark top and face of fabric.

#### C. Testing Laboratory Label and Accreditation:

1. For each type of product provide Guardian label affixed to Assembly.
2. The test is accredited and meets the requirements of ISO/IEC 17025 as verified by ANAB per Report AT1247.

E. U.S. Green Building Council (USGBC)- LEED- local and regional materials.  
Assembled in the United States by factory-trained employees.

#### 1.04 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data:

1. For automatic steel-tex fire shutters to include in maintenance manuals.

B. Warranty Documentation:

1. Special warranties specified in this Section.

#### 1.05 QUALITY ASSURANCE

A. Overall Standards:

1. Manufacturer shall maintain a quality control program for follow up service in accordance with ISO 1720.

B. Qualifications:

1. Installers:

- a. A firm or individual in the United States with no less than five years on-site installation experience in the United States, experienced in installing fire shutters 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 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 utilizing field measurements or hold to dimensions before fabrication and indicate measurements on shop drawings.

## 1.07 WARRANTY

### A. Manufacturer Warranty:

1. Manufacturer's Warranty one year from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.01 STEEL-TEX FIRE CURTAIN SHUTTER

#### A. Manufacturers:

1. U.S. Smoke & Fire, 888.917.8777 Ext 102  
[www.ussmokeandfirecurtain.com](http://www.ussmokeandfirecurtain.com), [www.ussmokeandfire.com](http://www.ussmokeandfire.com)

B. Basis of Design Manufacturer: U.S. Smoke & Fire Hose Stream 120® as manufactured by U.S. Smoke & Fire Corporation, USA.

#### B. Description:

1. Provide U.S. Smoke & Fire Hose Stream 120® as manufactured by U.S. Smoke and Fire Corp.
2. There are no substitutions of materials specified allowed during the bidding process. If, for any reason a deviation from materials specified by the designers is desired or warranted, a cover letter and a request for deviation. Transmittal form must be submitted to construction manager (CM). If the proposed deviation is rejected by the CM or the Designers, it is this subcontractor's responsibility to obtain the original items and maintain the original construction schedule. The Designer has the right to require the originally specified material or item and his decision on the matter is final.

#### B. Performance/Design Criteria:

1. Head Box- The head box shall be manufactured from 18 gauge galvanized steel. The enclosure shall be rated at the same temperature as the complete assembly.

2. Cover Plates- Removable cover plates shall be incorporated to allow access to the steel rollers.
3. Sizes- Standard head box sizes shall be 9 inches x 9 inches up to ten feet clear opening widths and 9 inches x 15 inches for larger widths. Larger head boxes may be required where the curtain drop is in excess of 10 feet drop height.
4. Bottom Bar- A weighted bottom bar shall be provided to prevent deflection and ensure correct operation.
5. Roller Assembly -The roller shall be constructed from a round tube, which will incorporate Motor and gearbox and a sealed heavy-duty ball bearing assembly.
6. Motor Controller- A motor controller housed in a steel enclosure shall be mounted onto the motor end of the head box.
7. Steel-Tex— The multi-layer steel textile shall be manufactured from wire inserted woven glass fiber with two hour coating. The woven wire reinforced high performance multi-layer fiber textile with 2 hour coating shall be tested to the standard of UL 10B with hose stream performance (ASTM E2226) for an opening in a two hour fire wall per IBC 715.3.
8. Side Guide Assemblies- Each guide assembly shall be fabricated of a steel channel with integral pressure retaining tabs.
9. Finish- Factory galvanized steel enclosure. Clean all metal surfaces for paint adhesion.

#### C.Operation

1. The SFS shall deploy upon a signal from the fire alarm system in an emergency situation.
2. Under normal operating conditions the fabric fire shutter would be held

in the retracted position via the motors operating a voltage.

3. Upon activation of the fire alarm, the controller will remove the supply voltage and the SFS shall descend in a controlled manner. A dynamic braking system housed in the motor control circuit shall control the speed of the descent of the curtain. To retract the SFS the control panel shall supply voltage to the motor controller and motors will drive the Steel-Tex fire shutter to the upper position. As the bottom bar or stopping bar hits the shutter housing a current limiting circuit will step back the voltage and current and hold the bottom bar in the retracted position.
4. Limit switches are not to be used to control the upper position of the curtain.
5. power fail to the group control panel, the supply is automatically switched to the integral standby battery. The curtain remains in the
6. Control Panel: Provide Control Panel (CP). During normal operation, the CP will provide an AC supply to the fabric fire shutter 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 control the descent of the motors and the will descend in a controlled manner.
7. Open on fire- signal, close on normal mode

## **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 required to be installed by others to support boxes. Proceed with installation only after

unsatisfactory conditions have been corrected.

### 3.02 INSTALLATION

- A. Install fabric fire shutter according to manufacturer's written instructions.
- B. Interface with Other Work:

- 1. Notification of deployment- sensors may be installed by others

### 3.03 FIELD QUALITY CONTROL

- A. Field Tests and Preventative Maintenance Service

- 1. Fire alarm testing- the SFS is required to deploy upon a signal from the fire alarm in an emergency situation. Drop test and commissioning per NFPA 80.

### 3.04 CLOSEOUT ACTIVITIES

- A. Demonstration:

- 1. Engage a factory-authorized service representative to demonstrate system.

- B. Training:

- 1. Engage a factory-authorized service representative to provide End User training per NFPA 3.

### 3.05 ANNUAL REQUIRED PREVENTIVE MAINTENANCE REQUIREMENT

- A. This is a high performance steel- tex fire shutter system that requires annual adjustment, maintenance and preventative maintenance service. Engage U.S. Care factory certified technician to maintain system once per annum per manufacturers operation and maintenance manual for the preventative maintenance

service.

- B. No contractor nor end user shall attempt any service of the system. Such action shall void the warranty on the assembly. After warranty period , all maintenance by a U.S. Care factory certified technician.

END OF SECTION 08 33 43