**SECTION 08 34 86**

**MANAUL FIRE RATED SMOKE CURTAINS**

**PART 1 - GENERAL**

# SUMMARY

* + 1. Section Includes: Fire and smoke rated fabric curtain system designed to provide a tight- fitting, smoke- and draft-control assembly as well as fire protection.
       1. Fusible link activated
       2. Gravity self-closing without auxiliary power
       3. Manual retraction without the need for power
    2. Related Sections:
       1. 09 2200Non-Load Bearing Wall Framing: Metal backing in housing mounting area.
       2. 09 9100Paints: Field painting of specified components; repainting of existing field painted elevator door frames.
       3. 08 3100 Access Panels

# REFERENCES

* + 1. ASTM E84-10 test report with calculated smoke development (CSD) of 2 and a smoke developed index (SDI) of 0 and a calculated flame spread (CFS) of 0.
    2. ICC Evaluation Service ESR-Report  Legend Report showing compliance with opening force, cyclic force, expansion characteristics
    3. NFPA Codes and Standards:
       1. 70  National Electrical Code.
       2. 105  Recommended Practice for the Installation of Smoke-Control Door Assemblies.
       3. ASTM – E84 Test report with Calculated Smoke Developed (CSD) of 2 and a Smoke Developed Index (SDI) of 0 and a Calculated Flame Spread (CFS) of 0.
    4. UL Minimum Performance Standards
       1. UL 10D Fire test for protective curtains (without hose stream)
       2. UL Oversized Certificate
       3. UL 1784  Air Leakage Tests for Door Assemblies.
       4. Gravity fail-safe design. No power will be required for deployment
       5. Certified to ISO 9001 1994 for the design, manufacturing, installation, and commissioning of Automatic Smoke Barriers and Partitions.
       6. UL follow up service report required

# SUBMITTALS

* + 1. Product Data: For each type of product
       1. Shop Drawings: Show fabrication and installation details for manual smoke curtains. Include plans, sections details, attachments to other work and the following:

1. Operating clearances
2. Requirements for supporting manual smoke curtains, track, equipment.
   * + 1. Quality Assurance/Control Submittals:
3. Certifications: Copy of specified items.
4. Manufacturer’s installation instructions and testing procedures

# CLOSEOUT SUBMITTALS

* + 1. Comply Section 01 7700Closeout Submittals; submit following items:
       1. Operation and Maintenance Manual
       2. Manufacturer’s Warranties

# QUALITY ASSURANCE

* + 1. Overall Standards:
       1. Provide units tested, approved, and labeled under UL 10B with Hose Stream and UL 1784 standards
       2. UL follow up Service Report
       3. Testing laboratory’s label permanently affixed to bottom bar
    2. Qualifications:
       1. Manufacturer Qualifications: Minimum five years’ experience in producing smoke containment systems of the type specified.
       2. Installer Qualifications: Factory trained by manufacturer.
    3. Certifications:
       1. UL accredited Testing Laboratory Label for UL 10D fire test of door assemblies with hose stream
       2. UL 1784 UL Labeled, listed, classified, certified and marked Smoke & Draft assembly with no more than an air leakage of 3.CFM
       3. UL Oversized certificate labeled, listed, classified, certified and marked where units exceed testing laboratory’s label size
    4. Pre-Installation Meeting:
       1. Schedule and convene a pre-installation meeting prior to commencement of field operations with representatives of the following in attendance: Owner, Architect, General Contractor, smoke containment system sub-contractor, painting sub-contractor, and electrical sub-contractor.
       2. Review substrate conditions, requirements of related work, installation instructions, storage and handling procedures, and protection measures.
       3. Keep minutes of meeting including responsibilities of various parties and deviations from specifications and installation instructions.

# DELIVERY, STORAGE, AND HANDLING

* + 1. Reference Section 01 6600Product Storage and Handling Requirements.
    2. Follow manufacturer’s instructions.

# WARRANTY

* + 1. Provide manufacturer’s standard one-year warranty.
    2. Maintenance and Testing:
       1. Perform minimum annual maintenance and testing on each smoke and fire containment system as required by the manufacturer’s warranty, code agency evaluation reports, and as required by local authority having jurisdiction.
       2. Provide test documentation.

**PART 2 - PRODUCTS**

# MANUFACTURER

Model DSI-M10D Manual Fire Protective Smoke Curtain

Manufacturer: DSI Smoke and Fire Curtains [www.doorsysinc.com](http://www.doorsysinc.com/) 866-534-3667

Label each smoke containment system with following information:

Manufacturer’s name.

Maximum leakage rating at specified pressure and temperature conditions.

Label of quality control agency.

# PERFORMANCE REQUIREMENTS

Air Leakage: Not to exceed 3 cfm (0.001416 m3/s) per sf of door opening.

Fire Rating: UL-10D 180-minute fire rated and labeled.

# COMPONENTS

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.

Removable cover plates shall be incorporated to allow access to the curtain rollers.

Standard head box sizes shall be 7” x 7”. Larger head boxes may be required where the curtain drop is more than 10’-0”

Side guide rails shall be 2” deep x 2” wide, primed steel finish

A weighted bottom bar shall be provided to prevent deflection and ensure correct operation under gravity.

The roller shall be constructed from an octagonal tube assembly.

A removable hand crank for manual retraction after automatic fire deployment.

The fabric curtain shall be manufactured from woven glass fiber fabric and wired mesh and shall be listed for UL 10D three hours.

# OPERATION

Under normal operating conditions the curtains would be held in the retracted position via fusible link.

Upon activation the of the fusible link located within the until the curtain shall descend under the power of gravity in a controlled manner. A speed governor system shall control the decent speed of the curtain in a “failsafe” operation without the use of power.

To retract the curtain a removable hand crank will be used to manually drive the curtain to the upper position. A hinged steel flap with a fusible link will be reattached to keep the bottom bar and curtain in the retracted position.

No special tools or replacement parts are needed after testing/resetting the system.

**PART 3 - EXECUTION**

# EXAMINATION

* + 1. Examine substrates upon which work will be installed.
       1. Verify related work performed under other sections is complete and in accordance with Shop Drawings.
       2. Verify wall surfaces and elevator door frames are acceptable for installation of smoke containment system components.

# INSTALLATION

* + 1. Install smoke curtain system components in accordance with manufacturer’s installation instructions.

# FIELD QUALITY CONTROL

* + 1. Field Test: Follow manufacturer’s cycle test procedures.
       1. Notify Owner’s Representative, local Fire Marshal, alarm sub-contractor a minimum one week in advance of scheduled testing.
       2. Complete maintenance service record.

# DEMONSTRATION

* + 1. Demonstrate required testing and maintenance procedures to Owner’s Representative.
    2. Maintenance and Testing:
       1. Perform minimum annual maintenance and testing on each smoke and fire curtain system as required by the manufacturer’s warranty, code agency evaluation reports, and as required by local authority having jurisdiction.
       2. Retain permanent record of tests.
    3. Qualified Door Systems, Inc Inspector assesses unit(s) after exposure to a fire event.

# MAINTENANCE

* + 1. Engage a Door Systems authorized service representative to test, adjust and maintain the system once per annum as required per NFPA 101 and NFPA 80.

END OF SECTION 08 34 86