**Section 08 34 85**

**FIRE RATED HoriZontal curtainS**

**PART 1 - General**

## Summary

### Section Includes: Fire protective smoke curtain system designed to provide smoke as well as fire protection.

### Products Supplied But Not Installed Under This Section:

#### Group Control Panel unit.

### Related Sections:

#### 09 2200−Non-Load Bearing Wall Framing: Metal backing in housing mounting area.

#### 09 9100−Paints: Field painting of specified components; repainting of existing field painted elevator door frames.

#### 28 3000−Detection and Alarm: Provision of smoke detectors.

#### Division 26 Sections for 120VAC and control circuit power including conduit, boxes, conductors, wiring devices, and emergency power.

#### 08 3100 Access Panels

## References

### 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.

### ICC Evaluation Service ESR- − Legend Report showing compliance with opening force, cyclic force, expansion characteristics

### NFPA Codes and Standards:

#### 70 − National Electrical Code.

#### 105 − Recommended Practice for the Installation of Smoke-Control Door Assemblies.

#### 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.

### UL Minimum Performance Standards

#### UL10C Positive pressure fire test for door assemblies

#### UL 10D- Fire test for protective curtains

#### UL Oversized Certificate

#### UL 864 − Classified Control Units for Fire Protective Signaling Systems

#### Impact test required by independent testing laboratory

#### Gravity fail-safe design. No battery back-up will be required for deployment

#### Certified to ISO 9001 1994 for the design, manufacturing, installation, and commissioning of Automatic Smoke Barriers and Partitions.

#### UL follow up service report required

## Submittals

### Product Data: For each type of product

#### Shop Drawings: Show fabrication and installation details for automatic smoke curtains. Include plans, sections details, attachments to other work and the following:

##### Operating clearances

##### Requirements for supporting automatic smoke curtains, track, equipment.

##### Locations of equipment components, switches, motors and controls. Differentiate between manufacturer-installed and field installed wiring

#### Quality Assurance/Control Submittals:

##### Certifications: Copy of specified items.

##### Manufacturer’s installation instructions and testing procedures

## Closeout Submittals

### Comply Section 01 7700−Closeout Submittals; submit following items:

#### Operation and Maintenance Manual

#### Manufacturer’s Warranties

## Quality Assurance

### Overall Standards:

#### Test Standard (AdHoc) EN 1363-1:2000 Fire resistance test – Part 1 General requirements

#### Test Standards (AdHoc) EN 1634-1:2008 Fire resistance and smoke test for door and shutter assemblies, openable windows, and elements of building hardware – Part 1 – Fire resistance test for door and shutter assemblies and openable windows.

#### Qualifications: UL follow up Service Report

#### Product must bear a UL label. “Tested in accordance to” standard not acceptable for fire rated smoke curtains. Intertek label not acceptable.

#### Manufacturer Qualifications: Minimum five years experience in producing smoke containment systems of the type specified.

#### Installer Qualifications: Factory trained by manufacturer.

### Certifications:

#### Impact test report by independent laboratory

#### California Department of Forestry and Fire Protection and Office of the State Fire Marshal Listing.

#### UL 10B Fire test of door assemblies time temperature curve (no hose stream)

#### UL 10C Positive Pressure fire test for door assemblies time temperature curve (no hose stream)

#### UL 10D Fire Test for fabric curtains

#### UL 864 UL Labeled, listed, classified, certified, and marked control units and accessories for Fire Alarm Systems

#### UL Oversized certificate labeled, listed, classified, certified, and marked

#### UL 10D Three Hour Fire Protective Curtain Listing Label.

### Pre-Installation Meeting:

#### 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.

#### Review substrate conditions, requirements of related work, installation instructions, storage and handling procedures, and protection measures.

#### Keep minutes of meeting including responsibilities of various parties and deviations from specifications and installation instructions.

## Delivery, Storage, and Handling

### Reference Section 01 6600−Product Storage and Handling Requirements.

### Follow manufacturer’s instructions.

## Warranty

### Provide manufacturer’s standard one year warranty.

### Maintenance and Testing:

#### 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.

#### Provide test documentation.

# Products

## Manufacturer

### Model DSI-H3HR Horizontal Fire 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

### UL 864 Controls for Automatic reset function

### Fire Rating: UL 10D The enclosure shall be fire rated up to 3 hours.

## 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 for single rollers maximum width of 26’-4”.

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

### The roller shall be constructed from an octagonal tube which will incorporate a 24v D.C. motor and gearbox and a sealed heavy duty ball bearing assembly.

### A motor control circuit housed in a steel enclosure shall be mounted onto the motor end of the head box.

### The fabric curtain shall be manufactured from VWG690 woven glass cloth. The woven glass fiber fabric shall have a nominal weight of no less than 690g/square meter and shall be UL listed for three hours.

## Operation

### The smoke and fire curtain shall deploy upon a signal from the fire alarm system in an emergency situation.

### The battery backup motor driven deployable fail-safe system includes motorized rewind. The system must contain a housed battery system at the Group Control Panels.

### Under normal operating conditions the curtains would be held in the retracted position via the motors operating at low voltage. The manufacture must be able to confirm that the motor windings are suitable for this type of operation.

### Upon activation of the fire alarm the control panel will power the curtain system to the closed position in a controlled manner. In the event of loss of power, the battery system will power the curtains to the closed position

### To retract the curtain the control panel shall supply 24v to the motor control circuits and motors will drive the curtains to the open position. As the bottom bar or stopping bar hits the curtain head box a current limiting circuit will step back the voltage and current and hold the bottom bar in the retracted position.

### Limit switches are not to be used to control the upper position of the curtain.

###  Test Facility- key switch required

# Execution

## Examination

### Examine substrates upon which work will be installed.

#### Verify related work performed under other sections is complete and in accordance with Shop Drawings.

#### Verify wall surfaces and elevator door frames are acceptable for installation of smoke containment system components.

## INSTALLATION

### Install fire curtain system components in accordance with manufacturer’s installation instructions.

## Field Quality Control

### Field Test: Follow manufacturer’s cycle test procedures.

#### Notify Owner’s Representative, local Fire Marshal, alarm sub-contractor a minimum one week in advance of scheduled testing.

#### Complete maintenance service record.

## Demonstration

### Demonstrate required testing and maintenance procedures to Owner’s Representative.

### Maintenance and Testing:

#### Perform minimum annual maintenance and testing on each fire curtain system as required by the manufacturer’s warranty, code agency evaluation reports, and as required by local authority having jurisdiction.

#### Retain permanent record of tests.

### Qualified Door Systems, Inc Inspector assesses unit(s) after exposure to a fire event.

## MAINTENANCE

### 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 85