SECTION 08 33 44

FIRE RATED AUTOMATIC HOSE STREAM CURTAINS.

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\*\* NOTE TO SPECIFIER \*\* Door Systems; Fire Curtains.
This section is based on the products of Door Systems, which is located at:1150 S. Las BrisasPlacentia, CA 92870Toll Free Tel: 866-534-3667Tel: 714-258-7100Fax: 714-258-7171Email: [request info (contact@doorsysinc.com)](https://arcat.com/rfi?action=email&company=Door%252BSystems&message=RE%253A%2520Spec%2520Question%2520(08349dsi)%253A%2520&coid=50183&spec=08349dsi&rep=&fax=714-258-7171)
Web: <https://www.doorsysinc.com>
 [ [Click Here](https://arcat.com/company/door-systems-50183) ] for additional information.
Door Systems provides innovative solutions for your smoke and fire containment needs as well as assisting in the concept, design, and layout of all future projects.
Whether you are an architect seeking consultation on a new construction project or a building owner/engineer looking to bring your existing facility up to code while reducing maintenance costs, the Door Systems staff is here to assist.
Door Systems products include DSI UL 10D Fire Protective Smoke Curtains, DSI UL 10B Hose Stream Rated Smoke and Fire Curtains, and Syntegra Integrated Fire Door Systems.
DSI-UL 10D FIRE PROTECTIVE SMOKE CURTAINS
The gravity fail-safe DSI UL 10D Smoke and Fire Protective Curtains have market leading features and the highest technical specifications available yet offer cost-effective and flexible solutions to fire and smoke control. Typically found in Elevators, Lobbies, Corridors, and Atriums.
DSI curtain systems are designed to be discreet, robust, and simple to operate and maintain, so a solution can be found for the most challenging architectural demands. Every smoke curtain and fire curtain from Door Systems, is rigorously tested and complies with all relevant UL standards allowing their incorporation into design throughout the United States.
DSI-UL 10B HOSE STREAM RATED SMOKE AND FIRE CURTAINS
The DSI-HS10B Hose Stream Rated Smoke and Fire Curtain incorporates the cutting-edge technology of our UL 10D curtain products but with the advantage of being code compliant in any fire wall rated up to 3 hours.
With a UL 10B 3-hour fire rating, the DSI-HS10B Fire Curtain can be used in fire walls and fire barrier walls as a replacement solution to traditional Coiling Steel Fire doors.
The assembly is comprised of a proprietary multi layered fire rated fiberglass/stainless steel fabric wound around a roller which is encased in a compact head box that is typically installed above the ceiling with side guides that are buried in the wall, making the system virtually invisible until activated.
The DSI-HHS10B Hose Stream Rated Horizontal Fire Shutter incorporates the cutting edge technology of our UL 10D curtain products but with the advantage of being tested and labeled to 2 hours UL 10B with Hose Stream.
The DSI Deployable Fabric Fire Wall Model DSI-FW119 allows architects to go beyond the maximum 25% fire barrier opening penetration restriction (IBC Section 707.6). Typical overhead or side acting opening protectives with a fire resistance rating fall into this limitation. However, with an ASTM E119/ UL263 rating, the DSI Moveable Fabric Fire Wall is considered a wall and therefore meets the exception (Exception 3) and is not limited to this rule.
The DSI ASTM E119 Fabric Fire Wall incorporates the cutting-edge technology of our Hose Stream Rated Smoke and Fire Curtain but with the advantage of being tested as a 2-hour fire rated wall assembly. This in turn allows architects more cost-effective options to open space design while still meeting code requirements.
THE SYNTeGRA INTEGRATED DOOR SYSTEM
The locally manufactured Syntegra Integrated Door System is created to include all working hardware and the door into a single integrated package. Syntegra completely integrates the steel door, hardware, and frame into a single working unit - no bolt-on or add-ons.
Precision-engineered, factory-assembled systems eliminate the need to order, coordinate, and site-assemble individual components. Code compliant, cost effective, unparalleled durability and superior aesthetics make the Syntegra Integrated Door System the product of choice for architects and building owners.
By utilizing Door Systems products for your next new or renovation project, you will be acquiring the best, complete, single source solution for your smoke and fire protection requirements.
I invite you to review the full array of products and services we have to offer and look forward to assisting you with any questions you might have regarding your future needs.
Sincerely,
Jeff Bonnema, President

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Hose Stream Rated Smoke and Fire Curtains.
		2. Manual Hose Stream rated Smoke and Fire Curtains.
		3. Deployable fabric fire wall.
		4. Hose Stream Rated Horizontal Smoke and Fire Curtains.
		5. Products Supplied but Not Installed Under This Section:
			1. Group Control Panel unit.
			2. Battery backup system.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete if not required.

* + - 1. Emergency Up Buttons.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. 08 31 00 - Access Panels.
		2. 09 22 00 - Non-Load Bearing Wall Framing: Metal backing in housing mounting area.
		3. 09 91 00 - Paints: Field painting of specified components; repainting of existing field painted elevator door frames.
		4. 28 30 00 - Detection and Alarm: Provision of smoke detectors.
		5. Division 26 - Sections for 120VAC and 24V control circuit power including conduit, boxes, conductors, wiring devices, and emergency power.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM International (ASTM):
			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. ASTM E2226 standard practice for application of hose stream.
		2. NFPA Codes and Standards:
			1. NFPA 70 - National Electrical Code.
			2. NFPA 105 - Recommended Practice for the Installation of Smoke-Control Door Assemblies.
		3. UL Minimum Performance Standards:
			1. UL 10B - Fire test for door assemblies with hose stream test.
			2. UL Oversized Certificate where units exceed the testing laboratory's label size.
			3. UL 263/ASTM E-119 for fire walls.
			4. UL 1784 - Air Leakage Tests for Door Assemblies.
			5. Gravity fail-safe design. No battery back-up will be required for deployment.
			6. Certified to ISO 9001 1994 for the design, manufacturing, installation, and commissioning of Automatic Smoke Barriers and Partitions.
			7. Accredited testing lab follow up service report required.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.

\*\* NOTE TO SPECIFIER \*\* Delete if not applicable to product type.

* + 1. Shop Drawings: Show fabrication and installation details for automatic fire curtains. Include plans, sections details, attachments to other work and the following:
			1. Operating clearances.
			2. Requirements for supporting automatic fire curtains, track, equipment.
			3. Locations of equipment components, switches, motors, and controls. Differentiate between manufacturer-installed and field installed wiring.
		2. Quality Assurance/Control Submittals:
			1. Certifications: Copy of specified items.
			2. Manufacturer's installation instructions and testing procedures.
		3. Comply Section 01 77 00 - Closeout Submittals; submit following items:
			1. Operation and Maintenance Manual.
			2. Manufacturer's Warranties.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum of five years documented experience.
		2. Installer Qualifications: Factory trained by manufacturer.
		3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
		4. Certification:
			1. UL accredited Testing Laboratory Label for UL 10B fire test of door assemblies with hose stream.
			2. UL 1784 S Label.
			3. Oversized certificate labeled, listed, classified, certified, and marked where units exceed testing laboratory's label size.
	2. PRE-INSTALLATION CONFERENCE
		+ 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, fire curtain 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.
	3. DELIVERY, STORAGE, AND HANDLING
		1. Reference Section 01 66 00 - Product Storage and Handling Requirements.
		2. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		3. Protect from damage due to weather, excessive temperature, and construction operations.
	4. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental, wind load conditions outside manufacturer's recommended limits.
	5. 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.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Door Systems, which is located at:1150 S. Las BrisasPlacentia, CA 92870Toll Free Tel: 866-534-3667Tel: 714-258-7100Fax: 714-258-7171Email: [request info (contact@doorsysinc.com)](https://arcat.com/rfi?action=email&company=Door%252BSystems&message=RE%253A%2520Spec%2520Question%2520(08349dsi)%253A%2520&coid=50183&spec=08349dsi&rep=&fax=714-258-7171);Web: <https://www.doorsysinc.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with the provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. HOSE STREAM RATED SMOKE AND FIRE CURTAINS
		1. Basis of Design: Model DSI-HS10B Hose Stream 180 Rated Smoke and Fire Curtain.
			1. Label each fire curtain system with following information:
				1. Manufacturer's name.
				2. Air Leakage: UL 1784 S Label.
				3. Fire Rating: UL-10B 180-minute fire rated and labeled.
				4. Label of quality control agency.
		2. Performance Requirements:
			1. Maximum leakage rating at specified pressure and temperature conditions Air Leakage: UL 1784 S Label.
			2. Fire Rating: UL-10B 180 minute.
		3. Components:
			1. Curtain Head Box: 0.050 inches (1.2 mm) primed steel.
				1. Enclosure is to be rated at the same temperature as the curtain fabric.
			2. Removable Cover Plates: Allow access to the curtain rollers.

\*\* NOTE TO SPECIFIER \*\* Larger head boxes may be required where the curtain drop is in excess of 10 ft (3048 mm).

* + - 1. Head Box Sizes:
				1. Single Rollers: 9 x 9 inches (229 x 229 mm) for single rollers.

Maximum Width: 16 ft (4877 mm).

* + - * 1. Multiple Rollers: 15 x 9 inches (381 x 229 mm) or 9 x 15 inches (229 x 381 mm) for low headroom.

Width: Over 16 ft (4877 mm).

* + - 1. Side Guide Rails (Depth x Width): 2 x 4 inches (51 x 102 mm) wide.
				1. Finish: Primed steel.
			2. Weighted Bottom Bar: Prevents deflection. Ensures correct gravity operation.
			3. Roller Construction: Octagonal tube. Incorporates a 24 VDC motor, gearbox, and a sealed heavy-duty ball bearing assembly.
			4. Motor Control Circuit: Housed in a steel enclosure.
				1. Mounted onto the motor end of the head box.
			5. Electromagnetic Force-Controlled Descent Speed: 6 to 24 inches (152 to 610 mm) per second.
			6. Fabric Curtain: Multiple layers of woven glass cloth and wired mesh.
		1. Operation:
			1. System Deployment: Upon a signal from the fire alarm system in an emergency situation.
			2. Total Loss of Primary and Auxiliary Power: The system must be "fail safe" to the operational position.
			3. Normal Operating Conditions: Curtain is held in the retracted position via the motor operating at low voltage.
				1. Manufacture: Must confirm motor windings are suitable for this operation type.
			4. Upon Fire Alarm Activation: The control panel removes the supply voltage, and the fabric fire curtain gravity descends in a controlled manner.
				1. Dynamic Braking System: Housed in the motor control circuit controls the curtain descent speed.
				2. Descent is electronically synchronized on overlapping curtains with a bottom bar.
			5. Fabric Fire Curtain Retraction: The control panel supplies 24 V to the motor control circuits and motors drive the curtains to the upper position.
			6. When Bottom or Stopping Bar Contacts the Curtain Head Box: A current limiting circuit steps back the operating voltage and current and holds the bottom bar in the retracted position.
			7. Not Acceptable: The use of limit switches to control the curtain upper position.
			8. Should Main Power Fail to the Group Control Panel:
				1. Power automatically switches to the integral standby battery.
				2. The fabric fire curtain remains fully retracted for 1 hour.
				3. Curtain remains fully operational until the battery low voltage cutoff facility reads a voltage of 21 V.

Curtain then safely gravity descends to the operational position.

* + - 1. Group Control Panel (GCP):
				1. Capable of controlling three 24 VDC motor assemblies.
				2. During Normal Operation: GCP provides a 24 VAC supply to the curtain motors holding curtain in the retracted position.
				3. Upon Smoke Detection:

The GCP fire alarm contact is opened by the fire alarm control system,

The GCP removes the 24 V supply to the curtain motors.

Curtains gravity descend in a controlled manner.

* + - 1. Open on Fire: Configured to be gravity fail safe.
			2. Test required Facility Switch.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. MANUAL HOSE STREAM RATED SMOKE AND FIRE CURTAINS
		1. Basis of Design: Model DSI-HSM10B Manual Hose Stream Smoke and Fire Curtain.
			1. Label each fire curtain system with following information:
				1. Manufacturer's name.
				2. Air Leakage: UL 1784 S Label.
				3. Fire Rating: UL-10B 180-minute fire rated and labeled.
				4. Label of quality control agency.
		2. Performance Requirements:
			1. Maximum leakage rating at specified pressure and temperature conditions Air Leakage: UL 1784 S Label.
			2. Fire Rating: UL-10B 180 minute.
		3. Components:
			1. Curtain Head Box: 0.050 inches (1.2 mm) primed steel.
				1. Enclosure is to be rated at the same temperature as the curtain fabric.
			2. Removable Cover Plates: Allow access to the curtain rollers.

\*\* NOTE TO SPECIFIER \*\* Larger head boxes may be required where the curtain drop is in excess of 10 ft (3048 mm).

* + - 1. Head Box Sizes:
				1. Single Rollers: 9 x 9 inches (229 x 229 mm) for single rollers.

Maximum Width: 16 ft (4877 mm).

Maximum Height 10 ft (3048 mm).

* + - 1. Side Guide Rails (Depth x Width): 2 x 2 inches (51 x 51 mm) wide.
				1. Finish: Primed steel.
			2. Weighted Bottom Bar: Prevents deflection. Ensures correct gravity operation.
			3. Roller Construction: Octagonal tube. Incorporated a speed governor gearbox, and a sealed heavy-duty ball bearing assembly.
			4. Gravity Force-Controlled Descent Speed: 6 to 24 inches (152 to 610 mm) per second.
			5. Fabric Curtain: Multiple layers of woven glass cloth and wired mesh.
		1. Operation:
			1. System Deployment: Upon activation of a replaceable fusible link with a temperature rise and melting point of 165 degrees F (74 degrees C) in an emergency situation.
			2. The system must be "fail safe" to the operational position.
			3. Normal Operating Conditions: Curtain is held in the retracted position via fusible link.
			4. Fabric Fire Curtain Retraction: Manual rewind the curtains to the upper position.
			5. Should the fusible link break or melt: Curtain then safely gravity descends to the closed position.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. DEPLOYABLE FABRIC FIRE WALL
		1. Basis of Design: Model DSI-FW119 Deployable Fabric Fire Wall.
			1. Label each fire curtain system with following information:
				1. Manufacturer's name.
				2. Temperature Rise Rating: Not more than 250 degree Fahrenheit above ambient after 120 minutes of standard fire exposure.
				3. UL263 / ASTM E119 Listed and labeled for use as a 2 hour movable fire wall.
				4. Label of quality control agency.
		2. Performance Requirements:
			1. UL263 / ASTM E119 Listed and labeled for use as a 2 hour movable fire wall.
			2. Temperature Rise Rating: Not more than 250 degree F (121 degrees C) above ambient after 120 minutes of standard fire exposure.
		3. Components:
			1. Curtain Head Boxes: Manufactured from 0.05 inches (1.2 mm) galvanized steel.
				1. To be rated at the same temperature as the curtain fabric.
				2. Install two curtain headboxes back to back with a 12 inches (178 mm) minimum gap between the deployable curtain fabrics to achieve temperature rise rating per UL263 / ASTM E119.
			2. Removable Cover Plates: Allow access to the curtain rollers.

\*\* NOTE TO SPECIFIER \*\* Larger head boxes may be required where the curtain drop is in excess of 10 ft' (3048 mm).

* + - 1. Head Box Sizes:
				1. Single Rollers: 17 1/2 x 17 1/2 inches (444.5 x 444.5 mm).

Width: Up to 16 ft (4877 mm).

* + - * 1. Multiple Rollers: 17 1/2 x 31 1/2 inches (444.5 x 800.1 mm).

Width: Over 16 ft (4877 mm).

* + - 1. Side Guide Rails (Depth x Width): 3 x 4 inches (76.2 x 102 mm). Finish: Primed steel.
			2. Weighted Bottom Bars: Prevent deflection. Ensures correct operation under gravity.
			3. Roller Construction: An octagonal tube which Houses a 208V motor, gearbox, and sealed heavy duty ball bearing assembly.
			4. Motor Control Circuit: Housed in a steel enclosure and mounted on the motor end of the head box.
			5. Electromagnetic Force-Controlled Descent Speed: No less than 6 inches (152 mm) per second and no more than 24 inches (610 mm) per second.
			6. Motor Control Circuit: Housed in a steel enclosure and mounted on the motor end of the head box.
			7. Fabric Curtain: Multiple layers of woven glass cloth, wire mesh and insulation.
				1. Rated for 120 minutes as tested to UL10B / UL263 / ASTM E119.
		1. Operation:
			1. System Deployment: Upon a signal from the fire alarm system in an emergency situation.
			2. Total Loss of Primary and Auxiliary Power: The system must be "fail safe" to the operational position.
			3. Normal Operating Conditions: Curtains are held in the retracted position via the motors operating at low voltage.
				1. Manufacture: Must confirm motor windings are suitable for this operation type.
			4. Upon Fire Alarm Activation: The control panel removes the supply voltage and the fabric fire wall gravity descends in a controlled manner.
				1. Dynamic Braking System: Housed in the motor control circuit controls the curtain descent speed.
				2. Descent is electronically synchronized on overlapping curtains with a bottom bar.
			5. Fabric Fire Wall Retraction: The control panel supplies 24 V to the motor control circuits and motors drive the curtains to the upper position.
			6. When Bottom or Stopping Bar Contacts the Curtain Head Box: A current limiting circuit steps back the operating voltage and current and holds the bottom bar in the retracted position.
			7. Should Main Power Fail to the Group Control Panel:
				1. Power automatically switches to the integral standby battery.
				2. The fabric fire wall remains fully retracted for 1 hour.
				3. Curtain remains fully operational until the battery low voltage cutoff facility reads a voltage of 21 V.

Curtains then safely gravity descend to the operational position.

* + - 1. Open on Fire: Configured to be gravity fail safe.
			2. Test required Facility Switch.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. HOSE STREAM RATED HORIZONTAL SMOKE AND FIRE CURTAINS
		1. Basis of Design: Model DSI-HHS10B Hose Stream Rated Horizontal Fire Curtain.
			1. Label each fire curtain system with following information:
				1. Manufacturer's name.
				2. Fire Rating: UL-10B and ASTM E2226 (Hose Stream test) 120 minutes rated.
				3. Label of quality control agency.
		2. Performance Requirements:
			1. Air Leakage: UL 1784 S Label.
			2. Fire Rating: UL-10B 120 minute fire rated and labeled.
		3. Components:
			1. Curtain Head Boxes: Manufactured from 0.05 inches (1.2 mm) galvanized steel.
				1. To be rated at the same temperature as the curtain fabric.
			2. Removable Cover Plates: Allow access to the curtain rollers.
			3. Weighted Bottom Bar: Prevents deflection ensuring correct operation.
			4. Roller Construction: An octagonal tube which Houses a 24 VDC motor, gearbox, and sealed heavy duty ball bearing assembly.
			5. Motor Control Circuit: Housed in a steel enclosure and mounted on the motor end of the head box.
			6. Fabric Curtain: Multiple layers of woven glass cloth and wire mesh.
		4. Operation:
			1. System Deployment: Upon a signal from the fire alarm system in an emergency situation.
			2. The battery backup motor driven deployable fail-safe system includes motorized rewind.
				1. The system contains a housed battery system at the Group Control Panels.
			3. Normal Operating Conditions: Curtains are held in the retracted position via the motors operating at low voltage.
				1. Manufacture: Must confirm motor windings are suitable for this operation type.
			4. Upon Fire Alarm Activation: The control panel will power the curtain system to the closed position in a controlled manner.
				1. If Power is Lost: The battery system will power curtain to the closed position.
			5. To Retract the Curtain: The control panel supplies 24 VDC to the motor control circuits and motors drive the curtains to the open position.
			6. When Bottom or Stopping Bar Contacts the Curtain Head Box: A current limiting circuit steps back the operating voltage and current and holds the bottom bar in the retracted position.
			7. Test required Facility Key switch.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until the substrates have been properly constructed and prepared.
			1. Verify related work performed under other sections is complete and in accordance with Shop Drawings.
			2. Verify wall surfaces are acceptable for installation of fire and smoke containment system components.
		2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install fire and smoke containment system components in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
	4. FIELD QUALITY CONTROL
		1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.
		2. 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.
	5. 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 units after exposure to a fire event.
	6. CLEANING AND PROTECTION
		1. Clean products in accordance with the manufacturers recommendations.
		2. Touch-up, repair or replace damaged products before Substantial Completion.
	7. 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