ICC-ES Evaluation Report

ESR-4761

Reissued January 2024

Subject to renewal January 2026

This report also contains:

- CBC Supplement

- LABC Supplement

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION **Section: 07 87 00—Smoke Containment Barriers** **DIVISION: 08 00 00—OPENINGS.** **Section: 08 30 00—Specialty Doors and Frames**	**REPORT HOLDER:** **DOOR SYSTEMS**	**EVALUATION SUBJECT:** **MODEL DSI-600 ELEVATOR SMOKE CONTAINMENT SYSTEM**	

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2018, 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2018, 2015, 2012, 2009 and 2006 *International Fire Code*® (IFC)

For evaluation for compliance with codes adopted by *Los Angeles Department of Building and Safety* (LADBS), see ESR-4761 LABC and LAFC Supplement.

Property evaluated:

Smoke containment

2.0 USES

The Model DSI-600 Elevator Smoke Containment System is used in conjunction with fire-resistance-rated elevator hoistway door and frame assemblies or in elevator lobbies to provide a smoke and draft control assembly. When installed over elevator openings equipped with a fire-resistance-rated elevator hoistway door and frame assembly, the system is intended for use as an alternative to the requirement for a separated enclosed elevator lobby in accordance with Item 3 of Section 3006.3 of the 2018 and 2015 IBC, Exception 3 of 2012 IBC Section 713.14.1, 2009 IBC Section 708.14.1 and 2006 IBC Section 707.14.1.

When installed remotely from elevator openings at the intersection of the elevator lobby and a non-fire-resistance-rated corridor, the system is intended for use as an alternative to the requirement for an enclosed elevator lobby in accordance with Item 2 of Section 3006.3 of the 2018 and 2015 IBC, Exception 5 of Section 2012 IBC Section 713.14.1, 2009 IBC Section 708.14.1 and 2006 IBC Section 707.14.1. When installed as described in this report, the system forms an opening protective in a smoke partition and is an alternative to the smoke and draft control doors required by 2018, 2015 and 2012 IBC Section 710.5.2.2, 2009 IBC Section 711.5.2 and 2006 IBC Section 710.5.2.

3.0 DESCRIPTION

3.1 General:

3.1.1 Model DSI-600 Elevator Smoke Containment System: The system consists of a headbox assembly, a listed releasing device (control panel), motor control unit(s), relay board, and curtain that unrolls from the headbox assembly located above the elevator hoistway opening or elevator lobby opening, down along wall guides to cover the opening in the event of actuation of smoke detector(s), the building's fire protection system or loss of power.

The curtain protects the elevator opening from smoke migration by creating a smoke and draft control barrier. The smoke containment system is connected to the smoke detection system located in the elevator lobby, or to the building's fire protection system, which initiates deployment of the curtain within 10 seconds of activation of the smoke detector or fire protection system alarm or loss of power.

In the event that elevator occupants encounter a deployed system, a rewind switch located on both sides of the curtain can be manually activated, per IBC Section 3002.6, to allow the occupants to exit from the elevator. The raised curtain will redeploy after egress if the presence of smoke continues to be detected. In addition, occupants can exit by manually lifting the deployed curtain using a grab strap attached to the curtain. After the alarm condition clears, the curtain automatically retracts into the headbox assembly.

In the event of a loss of power, an uplift force of less than 15 pounds (66 N) applied at the grab strap attached to the curtain can be used to allow occupant egress. In addition to the required rewind switches and integral grab strap, the curtains may also be installed by overlapping two curtain sections, thereby creating an optional pass through slot that can be used by occupants to exit the deployed curtain. The system is equipped with battery backup and will function as intended in the event of an interruption in the building's electrical power supply.

3.2 System Components:

3.2.1 Curtain: The curtain is an aluminum polymer coated fiberglass material minimum 13.8-mil-thick [0.0138 inch (0.35 mm)]. The curtain may be equipped with a maximum of two transparent vision panels measuring approximately 7.9-inches (200 mm) in width and 19.7-inches (500 mm) in height [with frame overall 11.8-inches (300 mm) in width and 23.6-inches (600 mm) in height].

3.2.2 Releasing Device: The listed releasing device, control panel Model GCP, complies with UL Standard 864 and is for use with motor control unit(s) Model MCC20, MCC40, MCC20-IOI or MCC40-IOI and fire alarm relay board Model BMS. The releasing device and motor control unit(s) control deployment and rewinding of the curtain. The releasing device is intended for connection to the building's 120VAC power supply and to either the contacts of the smoke detector located in the elevator lobby or to the building's fire protection system.

3.3 Smoke and Draft Control:

When tested in accordance with UL 1784, the system has air leakage ratings that do not exceed 3.0 cfm per square foot (0.015424 $m^3/s \cdot m^2$) of opening at a pressure differential of 0.1 inch w.c. (25 Pa) at both ambient and elevated temperatures.

4.0 INSTALLATION

4.1 General:

Installation of the system must comply with this report and the report holder's published installation and operating instructions. The installation and operating instructions must be available at the jobsite at all times during installation.

4.1.1 Model DSI-600 Elevator Smoke Containment System at Elevator Hoistway Door Opening: The wall guides must be surface-mounted or between-jamb-mounted to the elevator frame or the wall adjacent to the elevator frame. The maximum elevator door opening width and height must not exceed 80 inches (2032 mm) and 120 inches (3048 mm), respectively.

The headbox assembly must be installed above the elevator hoistway frame and wall guides. The control panel, motor control unit(s), and egress switches must be installed in accordance with the report holder's published installation instructions. Alarm signal leads must be connected to the elevator lobby smoke detector or the building's fire protection system.

The curtain must be unrolled into the wall tracks. The curtain must then be adjusted so the bottom bar is in contact with the floor. After initial adjustments, the curtain must be operated to verify alignment.

4.1.2 Model DSI-600 Elevator Smoke Containment System at Elevator Lobby Opening: The system must be attached to the wall of the non-fire-resistance-rated corridor with the headbox assembly installed above the elevator lobby opening to be protected. The maximum width and height of the elevator lobby opening must not exceed 80 inches (2032mm) and 120 inches (3048 mm), respectively. Installation procedures for the system must be in accordance with the report holder's installation instructions. The releasing device must be installed in accordance with the report holder's published installation instructions, the releasing device listing, and the applicable code.

Once the system is installed and energized, the system must be adjusted and operated in accordance with the report holder's installation and operating instructions.

4.2 Final Adjustment and Inspection:

After installation is complete, the installer must perform a final adjustment and inspection of the system in accordance with the report holder's published installation and operating instructions. Simulation of the smoke alarm or building's fire protection system, activation of the releasing device, curtain deployment and rewind must be performed to ensure proper operation. After installation, the system must be maintained in accordance with Sections 5.3 and 5.9 of this report.

5.0 CONDITIONS OF USE:

The Door Systems Model DSI-600 Elevator Smoke Containment System described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Installation must comply with this report, Door Systems published installation instructions, and the applicable code.

5.2 Installation must be by installers authorized by Door Systems.

5.3 The system must be cycle-tested by the building owner of record or owner's representative on a semiannual basis. A permanent record of the cycle tests must be retained by the building owner of record or the owner's representative.

5.4 A smoke detector complying with UL 268 must be installed at the ceiling in front of the elevator hoistway doors. Or smoke detectors complying with UL268 must be installed at the ceiling on both sides of the protected elevator lobby opening. The smoke detectors must be equipped with an auxiliary contact and battery backup (not provided by Door Systems) or an emergency electrical system. When approved by the building official, or their designated representative, the smoke containment system may be connected to the building's fire protection system instead of to the smoke detectors at the elevator hoistway doors or at the protected elevator lobby opening.

5.5 The system must be used with fire-resistance-rated elevator doors in order to comply with the "S" label requirements for tight-fitting smoke and draft control assemblies in accordance with the requirements of Section 715.4.3 of the 2009 and 2006 IBC, Section 716.5.3 of the 2015 and 2012 IBC and Section 716.2.2.1 of the 2018 IBC, allowing the elevator doors to open directly into the fire-resistance-rated or non-fire-resistance-rated corridor, eliminating the need for an enclosed elevator lobby in accordance with Item 3 of Section 3006.3 of the 2018 and 2015 IBC, Exception 3 of 2012 IBC Section 713.14.1, 2009 IBC Section 708.14.1 and 2006 IBC Section 707.14.1. In the absence of a corridor, elevator doors equipped with the system may open directly into an open floor plan.

5.6 When used as an alternative to the smoke and draft control doors required by 2018, 2015 and 2012 IBC Section 710.5.2.2, 2009 IBC Section 711.5.2 and 2006 IBC Section 710.5.2, the system must be installed at the opening created by the intersection of the elevator lobby and a non-fire-resistance-rated corridor to allow elimination of the enclosed elevator lobby in accordance with Item 2 of Section 3006.3 of the 2018 and 2015 IBC, Exception 5 of 2012 IBC Section 713.14.1, 2009 IBC Section 708.14.1 and 2006 IBC Section 707.14.1.

5.7 The system is not intended for use where elevator hoistway pressurization in accordance with 2018, 2015 and 2012 IBC Section 909.21, 2009 IBC Section 708.14.2 and 2006 IBC Section 707.14.2 is provided, except when the system described in this report is used as a component of a smoke control system designed by registered professionals in accordance with the applicable requirements of Section 909 of the IBC and the IFC.

5.8 The system may be used in smoke control systems designed by registered professionals in accordance with the applicable requirements of Section 909 of the IBC and the IFC.

5.9 Under the 2018 IBC and IFC, openings protected with the system must be maintained in accordance with Sections 108 and 705.2 of the 2018 IFC and Chapter 8 of NFPA 105. Under the 2018 IBC and IFC, annual inspection must be in accordance with Chapter 8 of NFPA 105. Under the 2015, 2012 and 2009 IBC and IFC, openings protected with the system must be maintained in accordance with Sections 107 and 703.1.2 of the 2015, 2012 and 2009 IFC and Chapter 5 of NFPA 105. Under the 2015, 2012 and 2009 IBC and IFC, annual inspection must be in accordance with Section 5.2 of NFPA 105.

5.10 The smoke-containment system described in this report is intended for use with elevators or elevator lobbies when, in accordance with IBC Section 1003.7, the elevators are not used as a component of a required means of egress from any part of the building.

5.11 The Door Systems Model DSI-600 Elevator Smoke Containment System and releasing device Model GCP are manufactured under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Smoke Containment Systems Used with Fire-resistive Elevator Hoistway Doors and Frames (AC77), dated February 2019.

7.0 IDENTIFICATION

7.1 The Door Systems Elevator Smoke Containment System and releasing device described in this report must bear a label indicating the report holder's name (Door Systems) and address, the product name, the model number (DSI-600 or GCP), the leakage rating (unless specified in the installation manual), and the report number (ESR-4761).

7.2 The report holder's contact information is the following:

DOOR SYSTEMS
1150 LAS BRISAS
PLACENTIA, CALIFORNIA 92870
(714) 258-7100
www.doorsysinc.com
contact@doorsysinc.com

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 87 00—Smoke Containment Barriers

DIVISION: 08 00 00—OPENINGS
Section: 08 30 00—Specialty Doors and Frames

REPORT HOLDER:

DOOR SYSTEMS

EVALUATION SUBJECT:

MODEL DSI-600 ELEVATOR SMOKE CONTAINMENT SYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Model DSI-600 Elevator Smoke Containment System, described in ICC-ES evaluation report ESR-4761, has also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2020 *City of Los Angeles Building Code* (LABC)
- 2020 *City of Los Angeles Fire Code* (LAFC)

2.0 CONCLUSIONS

The Model DSI-600 Elevator Smoke Containment System, described in Sections 2.0 through 7.0 of the evaluation report ESR-4761, complies with LABC Section 3006.3 (items 2, 3 and 5), LABC Section 710.5.2.2, and LAFC Sections 108 and 705.2, and is subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Model DSI-600 Elevator Smoke Containment System described in this evaluation report must comply with all of the following conditions:

- All applicable sections in the evaluation report ESR-4761.
- The design, installation, conditions of use, identification, inspection, maintenance and testing are in accordance with the 2018 *International Building Code*® (IBC) and 2018 *International Fire Code*® (IFC) provisions noted in the evaluation report ESR-4761.
- The design, installation, identification, inspection, maintenance and testing are in accordance with additional requirements of LABC Chapter 7 and LAFC Sections 108, 705.2 and 909, as applicable.
- The Model DSI-600 Elevator Smoke Containment System may be used in smoke control systems designed by registered professionals in accordance with the applicable requirements of Section 909 of the LAFC.
- When used in a smoke control system in new buildings, testing of Model DSI-600 Elevator Smoke Containment System must comply with applicable requirements of the City of Los Angeles Information Bulletin P/MC 2014-001.

This supplement expires concurrently with the evaluation report, reissued January 2024.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 87 00—Smoke Containment Barriers

DIVISION: 08 00 00—OPENINGS
Section: 08 30 00—Specialty Doors and Frames

REPORT HOLDER:

DOOR SYSTEMS

EVALUATION SUBJECT:

MODEL DSI-600 ELEVATOR SMOKE CONTAINMENT SYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Model DSI-600 Elevator Smoke Containment System, described in ICC-ES evaluation report ESR-4761, has also been evaluated for compliance with CBC Chapters 7 and 30 and CFC Chapters 1, 7 and 9 of the code editions noted below.

Applicable code editions:

- 2019 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 *California Fire Code* (CFC)

2.0 CONCLUSIONS

2.1 CBC:

The Model DSI-600 Elevator Smoke Containment System, described in Sections 2.0 through 7.0 of the evaluation report ESR-4761, complies with CBC Section 3006.3 (Items 2, 3 and 5) and CBC Section 710.5.2.2, provided the design, installation, inspection and maintenance are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of the CBC, as applicable.

2.1.1 OSHPD: The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

2.1.2 DSA: The applicable DSA Sections of the CBC are beyond the scope of this supplement.

2.2 CFC:

The Model DSI-600 Elevator Smoke Containment System, described in Sections 2.0 through 7.0 of the evaluation report ESR-4761, complies with CFC Sections 108, 705.2 and 909.12, provided the design, installation, inspection and maintenance are in accordance with the 2018 *International Fire Code*® (IFC) provisions noted in the evaluation report and the additional requirements of the CFC, as applicable.

This supplement expires concurrently with the evaluation report, reissued January 2024.