Code Compliance Research Report
CCRR-0455

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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

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REPORT SUBJECT:
SmokeFighter® Smoke and Draft Curtain Assemblies
FireFighter® Fire Protective Curtain Assemblies

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2024, 2021, 2018 *International Building Code®* (IBC)
- 2024, 2021, 2018 *International Fire Code®* (IFC)
- 2024, 2021, 2018 NFPA 101 *Life Safety Code*
- 2023, 2020 *Florida Building Code, Building* (FBC) (see Section 9.1)
- 2025, 2022 *California Building Code* (CBC) (See Section 9.2)
- 2023 *City of Los Angeles Building Code* (LABC) (See Section 9.3)

NOTE: This report references the most recent Code editions cited. Section numbers in earlier editions may differ.

1.2 The McKEON Curtain Assemblies have been evaluated for the following properties (see Table 1):

- Smoke and Draft Control
- Fire resistance (FireFighter® assemblies only)

1.3 The McKEON SmokeFighter® Smoke and Draft Curtain Assemblies have been evaluated for the following uses (see Table 1):

- Use as a smoke and draft control assembly in accordance with IBC Section 710.5.2.2
- Use as a smoke partition defined by NFPA 101 Section 8.4
- Use as hoistway opening protection for fire-resistance-rated elevator hoistway doors and frames in accordance with IBC Section 3006.3, Item 5. (SmokeFighter® D150E with Vision Panel only)

1.4 The McKEON FireFighter® Fire Protective Curtain Assemblies have been evaluated for the following uses (see Table 1):

- Use as a fire protective curtain assembly (2024 and 2021 IBC only)
- Use as a smoke and draft control assembly in accordance with IBC Sections 710.5.2.2 and 716.2.2.1.1
- Use as a smoke partition defined by NFPA 101 Section 8.4

2.0 STATEMENT OF COMPLIANCE

The McKEON Curtain Assemblies comply with the Codes listed in Section 1.1, for the properties stated in Section 1.2, and uses stated in Sections 1.3 and 1.4, when installed as described in this report, including the Conditions of Use stated in Section 6.0.

3.0 DESCRIPTION

3.1 SmokeFighter® Model D150/D150E Smoke and Draft Curtain Assemblies: The Model D150/D150E Curtain Assemblies are vertical coiling smoke and draft rated curtains containing major components that include a reinforced fabric curtain, bottom bar, side guides, hood and barrel assembly, motor drive unit, release device, and control panel.

The fabric curtain consists of E-Glass polyurethane coated fabric with an integral reinforced weave and a minimum thickness of 0.40 mm. The bottom bar and side guides provide stability for the fabric as it moves vertically in both

descent and ascent. Multiple fabric curtain panels may be used when overlapped by a minimum of 15.75 inches. A clear plastic (non-porous) vision panel is allowed in the curtain fabric.

The Model D150E incorporates an integral door feature wherein the bottom bar serves as the pivoting mechanism. When the fabric swing door is in the closed position, a hook and loop composition sewn into the leading edge of the fabric holds the door in place.

See Table 2 for maximum assembly sizes.

3.2 SmokeFighter® Model D500S Smoke and Draft Perimeter Assembly: The Model D500S Perimeter Assembly is comprised of vertical coiling curtains designed to inter-connect. Assembly major components include fabric curtains, bottom bar(s), side guides, retractable joint fastener(s), hood and barrel assemblies, motor drive units, release device, and control panel.

The fabric curtain consists of E-Glass polyurethane coated fabric with an integral reinforced weave and a minimum thickness of 0.40 mm. The bottom bar(s), side guides, and retractable joint fastener(s) provide stability for the fabric as it moves vertically in both descent and ascent. Multiple fabric curtain panels may be used when overlapped by a minimum of 15.75 inches. A single assembly can be configured of multiple sections connected together at various corner angles using the retractable joint fastener. Multiple sections may be configured as a complete self-supporting perimeter enclosure or terminated at the wall with side guides.

See Table 2 for maximum assembly sizes.

3.3 FireFighter® Model D200/D200E Fire Protective Curtain Assemblies: The Model D200/D200E Curtain Assemblies are vertical coiling fire protective curtain assemblies containing major components that include reinforced fabric curtain, bottom bar, side guides, hood and barrel assembly, motor drive unit, release device, and control panel.

The fabric curtain consists of a fiberglass fabric with integral stainless steel wire weave, and minimum thickness of 0.54 mm. The bottom bar and side guides provide stability for the fabric as it moves vertically in both descent and ascent. Multiple fabric curtain panels may be used when overlapped by a minimum of 23-5/8 inches.

The Model D200E incorporates an integral door feature wherein the bottom bar serves as the pivoting mechanism.

When the fabric swing door is in the closed position, a hook and loop composition sewn into the leading edge of the fabric holds the door in place.

See Table 2 for fire ratings and maximum assembly sizes.

3.4 Oversized Assemblies: Curtain assemblies exceeding the maximum size listed in Table 2 may be installed when bearing an oversize label, issued by Intertek, stating the door is constructed in accordance with the certified design except for size. Acceptance of the oversize assembly is at the discretion of the Authority Having Jurisdiction.

4.0 PERFORMANCE CHARACTERISTICS

4.1 Fire Resistance: The McKEON Curtain Assemblies have the fire-resistance ratings listed in Table 2.

4.2 Smoke and Draft Control: The McKEON Curtain Assemblies have air leakage rates of less than 3.0 cubic feet per minute per square foot of assembly area at 0.10 inch H_2O when tested in accordance with UL 1784, without the use of an artificial bottom seal. Smoke and draft control assemblies have a minimum clear opening width (measured between side guides) of 29.5 inches and a minimum curtain drop height (measured to bottom of headbox) of 78 inches.

5.0 DESIGN AND INSTALLATION

5.1 General: The McKEON Curtain Assemblies must be installed in accordance with the manufacturer's published installation instructions, the applicable Code, and this Research Report. A copy of the manufacturer's instructions must be available on the jobsite during installation.

5.2 Installation at Fire-resistance-rated Elevator Doors: Model D150E Curtain Assemblies with a vision panel complying with ASME A17.1/CSA B44 Section 2.11.6.3 may be installed at fire-resistance-rated elevator hoistway doors, allowing the elevator doors to open directly into a fire-resistance-rated corridor, and eliminating the need for an enclosed elevator lobby, in accordance with Item 5 of IBC Section 3006.3. Alternatively, fire-resistance-rated elevator doors protected by a Model D150E Curtain Assembly may open directly into an open floor plan.

5.3 Smoke Detection System: The McKEON Curtain Assemblies must be connected to an approved smoke detection system. The smoke detectors shall be tested and listed to UL 268 and shall be equipped with a battery backup or be connected to an emergency electrical system.

When installed at an elevator hoistway door, the D150E Curtain Assembly shall be connected to a smoke detector installed on the ceiling in front of the elevator hoistway door.

When approved by the Authority Having Jurisdiction, the McKEON Curtain Assemblies may be connected to the building fire protection system instead of direct connection to a smoke detection system at the installation location.

5.4 Final Adjustment and Inspection: After installation is complete, the installer must perform a final adjustment and inspection of the system. The deployment and rewind motor must be engaged and inspected for proper operation. Travel of the curtain(s) must be inspected and adjustments made as required. The operating process, including simulation of the smoke alarm activation of the releasing device, must be repeated five times to verify functionality.

6.0 CONDITIONS OF USE

6.1 Installation must comply with this Research Report, the manufacturer's published installation instructions, and the applicable Code. In the event of a conflict, this report governs.

6.2 Installation must be by installers authorized by McKEON.

6.3 Unless approved as indicated in Section 3.4, the McKEON Curtain Assemblies must comply with the maximum size restrictions in Table 2.

6.4 The McKEON Curtain Assemblies must be connected to a smoke detection system as described in Section 5.3.

6.5 After installation, the Curtain Assemblies must be maintained in accordance with Sections 110 and 705.2 of the IFC, Chapters 8 and 9 of NFPA 105, and Chapter 21 of NFPA 80, as applicable.

6.6 The Curtain Assemblies must be cycle-tested by the building owner of record or owner's representative on a semi-annual basis. A permanent record of the cycle tests must be retained by the building owner of record or the owner's representative.

6.7 The D150E Curtain Assembly shall not be used where elevator hoistway pressurization is provided in accordance with IBC Section 909.21, except where the smoke control system is designed by a registered professional in accordance with the applicable requirements of Section 909 of the IBC and IFC.

6.8 The D150E and D200E Curtain Assemblies shall not be used as a component of a required means of egress from any part of the building, in accordance with IBC Section 1003.7.

6.9 The D150E and D200E Curtain Assemblies have not been evaluated for accessibility or for use in conjunction with an accessible means of egress in accordance with IBC Section 1009.

6.10 The McKEON Curtain Assemblies are manufactured under a quality control program with inspections by Intertek Testing Services NA, Inc.

7.0 SUPPORTING EVIDENCE

7.1 Reports of tests demonstrating compliance with NFPA 252, UL 10B, UL 10C, UL 10D, and UL 1784.

7.2 Intertek Listing Reports on the Intertek Directory of Building Products:

- McKEON FireFighter® D200 and D200E 1 Hour Fire & Smoke Barrier (with or without Hook & Loop Passage Door)
- McKEON FireFighter® Model D200 and D200E 3 Hour Fire & Smoke Barrier
- McKEON SmokeFighter® Model D150 and D150E Smoke & Draft Curtain Assemblies
- McKEON SmokeFighter® Model D500S Smoke & Draft Curtain Assembly with Intermediate Fasteners

8.0 IDENTIFICATION

The McKEON Curtain Assemblies are identified with the manufacturer's name (McKEON), the product name, the Warnock Hersey Mark as shown below, the applicable test standards (NFPA 252, UL 10B, UL 10C, UL 10D, and/or UL 1784), the rated duration where applicable, a serial number,

the words "DO NOT REMOVE OR COVER THIS LABEL," the words "SEE INSTALLATION INSTRUCTIONS," and the Code Compliance Research Report number (CCRR-0455).

9.0 OTHER CODES:

9.1 FLORIDA BUILDING CODE: The McKEON Curtain Assemblies, described in Sections 2.0 through 7.0 of this Research Report, comply with the *Florida Building Code - Building,* for the editions indicated in Section 1.1 of this report, subject to the following conditions:

- The McKEON Curtain Assemblies are limited to interior use.
- Use of the SmokeFighter® Model D150E as hoistway opening protection for fire-resistance-rated elevator hoistway doors and frames must comply with Section 3006.3, Item 5, and requires use of a vision panel complying with ASME A17.1/CSA B44 Section 2.11.6.3.

Intertek is an approved evaluation entity and quality assurance entity pursuant to Florida Statute 553.842 – *Product Evaluation and Approval*.

9.2 CALIFORNIA BUILDING CODE: The McKEON Curtain Assemblies, described in Sections 2.0 through 7.0 of this Research Report, comply with the *California Building Code* and *California Fire Code,* for the editions indicated in Section 1.1 of this report, subject to the following conditions:

- The McKEON Curtain Assemblies are limited to interior use.
- Use of the SmokeFighter® Model D150E as hoistway opening protection for fire-resistance-rated elevator hoistway doors and frames must comply with Section 3006.3, Item 5, and requires use of a vision panel.

9.3 CITY OF LOS ANGELES BUILDING CODE: The McKEON Curtain Assemblies, described in Sections 2.0 through 7.0 of this Research Report, comply with the City of Los Angeles Building Code and City of Los Angeles Fire Code, for the editions indicated in Section 1.1 of this report, subject to the following conditions:

- The McKEON Curtain Assemblies are limited to interior use.
- Use of the SmokeFighter® Model D150E as hoistway opening protection for fire-resistance-rated elevator hoistway doors and frames must comply with Section 3006.3, Item 3, and requires use of a vision panel.
- After installation, the smoke control systems shall be tested in accordance with LABC Section 909.3.1.
- The smoke control systems shall be retested semi-annually in accordance with LABC Section 909.3.2.

10.0 CODE COMPLIANCE RESEARCH REPORT USE

10.1 Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

10.2 Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

10.3 Reference to the https://bpdirectory.intertek.com is recommended to ascertain the current version and status of this report.

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TABLE 1 - PROPERTIES EVALUATED

PROPERTY	APPLICABLE CODE SECTIONS[1]				
	IBC; CBC; LABC	CFC; LAFC	IFC	FBC	NFPA 101
Smoke and draft control	710.5.2.2 716.2.1.4 716.2.2.1.1 909	909	909	710.5.2.2 716.5.3.1 909	8.4
Fire resistance	716.4	-		716.5.3	8.3.3
Hoistway opening protection	3006.3	-		3006.3	-
Installation, inspection, and maintenance	710.5.2.2 716.1 716.2.10 716.4.3	109 705.2	110 705.2	710.5.2.2 716.1 716.5.3.1	8.8

[1]Section numbers pertain to the most recent edition cited in Section 1.1 of this report.

TABLE 2 – CURTAIN ASSEMBLY FIRE RATINGS AND SIZE LIMITATIONS

Door Type	Model	Fire Rating (Minutes)	Maximum Opening Sizes[3]		
			Area (sq. ft.)	Width	Height
Smoke & Draft Curtain Assemblies	D150 / D150E	NA	NA	500’-0”	48’-0”
Smoke & Draft Perimeter Curtains	D500S	NA	NA	Unlimited[1]	48’-0”
Fire Protective Curtain Assemblies	D200 / D200E	UL 10D: 180 UL 10B/10C: 20 w/o hose	143	13’-0”[2]	11’-0”[2]

[1] The Model D500S is comprised of multiple sections connected vertically with a retractable joint fastener. Each individual section is allowed a maximum size of 500’-0” wide x 48’-0” high.

[2] Doors exceeding these dimensions must have an oversized label, issued by Intertek, stating the door is constructed in accordance with the certified design except for size. Acceptance of the oversize door is at the discretion of the Authority Having Jurisdiction.

[3] See Section 4.2 for minimum size limitations applicable to smoke and draft control assemblies.