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DIVISION: 08 00 00 – OPENINGS

Section: 08 11 00 – Metal Doors and Frames

Section: 08 30 00 – Specialty Doors and Frames

Section: 08 35 13.23 – Accordion Folding Fire Doors

REPORT HOLDER:

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REPORT SUBJECT:

McKEON Vertical Rolling Steel Doors With or Without
Integral Proprietary Swing Doors;

McKEON Vertical Rolling Curtain Shutter

McKEON Side Acting and Side Coiling Steel Fire Doors With
or Without Integral Proprietary Swing Doors;

McKEON Horizontal Sliding Accordion Door Assemblies; and

McKEON Horizontal Rolling Steel Fire and Smoke Shutters

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2021, 2018, 2015 *International Building Code*® (IBC)
- 2021, 2018, 2015 *International Fire Code*® (IFC)
- 2023, 2020 *Florida Building Code* (see Section 9.1)
- 2022 *California Building Code* (see Section 9.2)
- 2023 *City of Los Angeles Building Code* (see Section 9.3)

NOTE: This report references the most recent editions of the Codes cited. Section numbers may be different for earlier editions of the Codes.

1.2 The McKEON fire doors, rolling steel doors, and accordion doors, recognized in this report have been evaluated for the following properties (see Table 1):

- Fire resistance
- Smoke and draft control

1.3 The McKEON fire doors, rolling steel doors, and accordion doors, recognized in this report have been evaluated for the following uses (see Table 1):

- As fire door assemblies for protection of vertical and horizontal openings as required in IBC Section 716.
- As fire door assemblies for use as opening protectives in openings through fire walls per IBC Section 706.8, fire barriers per IBC Section 707.6, fire partitions per IBC Section 708.6, smoke barrier walls per IBC Section 709.5, and smoke partition walls per IBC Section 710.5.
- As fire door assemblies used as smoke and draft control assemblies as required in IBC Section 716.2.1.4 and 716.2.2.1.1, as indicated in Section 4.2 of this report.
- As egress fire doors in accordance with IBC and IFC Section 1010, as described in Section 6.3 of this report.
- Fire door assemblies with side-swinging egress doors as described in Section 3.6 of this report are recognized for use as means of egress in compliance with IBC and IFC Section 1010.
- The Horizontal sliding accordion assembly, model AC8800, may be used as a means of egress component complying with IBC and IFC Section 1010.3.3.
- Horizontal fire and smoke shutters are recognized for compliance with UL 10B, with limitations as described in Sections 3.4, 4.4, and 5.4.

2.0 STATEMENT OF COMPLIANCE

The McKEON fire doors, rolling steel doors, rolling curtain shutters, and accordion doors recognized in this report comply with the Codes listed in Section 1.1, for the properties stated in Section 1.2, and uses stated in Section 1.3, when installed as described in this report including the Conditions of Use stated in Section 6.

3.0 DESCRIPTION

3.1 Vertical Rolling Steel Doors:

3.1.1 General: Vertical-coiling fire door assemblies contain major components that include slats, insulated slats with back panel, wall guides, bottom bars, barrel assembly, counterbalance mechanism, and release devices.



3.1.2 McKEON Vertical Rolling Steel Doors, Models – CFS, FSFD, FSFD-IS, FSFD-STC, FSFD-TR, and Dynamic 110F: Doors include insulated and non-insulated assemblies. Model CFS is non-insulated and uses an F1 1-1/4 inch x 3/8 inch profile slat; Model FSFD uses an F3 3 inch x 7/8 inch profile slat; FSFD-IS and FSFD-STC use slats that are mineral wool insulated of sizes: IS 2-5/8 inch x 7/8 inch, IH 3 inch x 1 inch, and ID 3-1/4 inch x 1-1/2 inch profile; FSFD-TR uses a specified Portland cement-based cementitious fireproofing, insulated IS 2-5/8 inch x 7/8 inch, and IH 3 inch x 1 inch profile slats; Dynamic 110F uses McKEON F3-D slat profile that is 3 inch x 1-3/8 inch in size. Slats are 22 gauge [0.030], 20 gauge [0.036], 18 gauge [0.048], or 16 gauge [0.058] thick G60 galvanized, or Series 300 stainless steel. Applications with IS, IH, and ID slats are with back panels of 22, 20, or 18 gauge, and front panels of 16, 18, 20, or 22 gauge.

3.1.3 McKEON Series T2000/T5000/TU5000 Vertical Rolling Steel Fire Door with Integral Proprietary Swing Doors: Doors include non-insulated and insulated vertical rolling steel fire door assemblies with integral swinging egress doors. The non-insulated T2000 series uses the F3 flat profile slats 3 inch x 7/8 inch. The insulated doors use steel slats that are insulated with mineral wool insulation. The insulated profile types are IS, IH, or ID. Models T2000-TR and T5000-TR models are insulated fire rated doors with temperature rise rating.

3.2 Side-Acting and Side-Coiling Fire Door Assemblies:

3.2.1 General: Side-acting and side-coiling doors with steel slats in a vertical orientation. Doors open from the side with or without a barrel assembly with automatic release.

3.2.1.1 McKEON Series S4000, S9000, and S7000 Side-Coiling and Side-Acting Steel Fire Door With or Without Integral Proprietary Swing Doors: Models S4000, S9000, and S7000 are non-insulated side-acting steel fire doors. Models S4000-IS, S9000-IS, and S7000-IS are insulated fire doors. Models S4000-TR, S9000-TR, and S7000-TR are insulated fire rated doors with temperature rise rating. These side-coiling doors may coil one way or be bi-parting with a center meeting edge.

The side-coiling fire doors have slats that are 20 gauge [0.036] minimum. For temperature rise applications, the

slat is filled with specified Portland cement-based fire resistive material.

3.3 Horizontal HH Sliding Accordion Fire Door Assemblies:

3.3.1 General: Vertical horizontal sliding accordion fire doors with top mounted horizontal tracks that may contain integral proprietary swing doors. The door stores into a side pocket when in open position. Doors are available as manually operated or motorized.

3.3.1.1 McKEON Series AC8000 Accordion Fire Door Systems With or Without Integral Proprietary Swing Doors: Accordion-type sliding doors comprised of a series of interlocking panels, which are suspended by an overhead track assembly. Every other panel employs a roller bearing detail that is interlocked within a formed steel guide and a roller guide retaining block.

Available in a bi-parting door configuration and as bi-parting with one side consisting of side-acting or side-coiling doors of series S4000, S9000, and S7000.

3.4 Horizontal Rolling Steel Fire and Smoke Shutters: The McKEON H200 horizontal rolling steel fire and smoke shutters are recognized for installation in masonry or concrete openings or attached to fireproofed or encased steel beams.

The H200 units consist of an interlocking slat curtain designed to travel in a horizontal plane. Slats are F3, F3-D, ID, or IH 18 gauge [0.048] galvanized or stainless steel. Insulated slats are with mineral wool.

3.5 Vertical Rolling Fire and Smoke Curtain Shutters: The McKEON D400 rolling fire and smoke curtain shutter is recognized for installation in light-gage steel framed gypsum or masonry wall openings.

The D400 unit consists of a rolling curtain panel made by permanently joining textile layers, a barrel and headbox above the opening, and side guides. No curtain overlap or egress openings are allowed.

3.6 Side-Swinging Egress Doors: Side-swinging egress doors shall be fire rated, listed, and labeled as evidence of compliance with UL 10C and the applicable Code, are constructed within qualifying McKEON vertical rolling, side-





acting, side-coiling, or accordion-type doors as integral parts of the fire door assembly.

3.6.1 Egress Door Assembly: To qualify as egress doors the side-swinging fire door assemblies shall be installed with approved hardware in accordance with door listing requirements and door operation requirements in IBC Section 1010. All components of the fire door assembly must be compatible fire door assembly components per NFPA 80, including but not limited to: door, frame, gasketing, latching hardware, and hinges. The egress door assemblies constructed within rolling door curtains are per the details of the rolling door listing procedures.

3.6.2 Egress Door Frame: Swinging door egress frames are of structural steel tube with minimum requirements per the rolling door listing.

3.6.3 Fire Door Opening Devices: For each egress exit door, listed fire exit hardware and listed panic hardware are required to be provided on one face, with lever or pull handle on the opposite door face.

3.6.4 Closers: Listed and labeled surface or recess mounted closers may be used.

3.6.5 Electromagnetic Door Holders: Listed and labeled surface mounted electromagnetic door holders may be used.

3.7 Fire Door Motor Operators: Fire door motor operators shall be listed and labeled for the intended use.

3.8 Battery Backup System: Battery backup systems shall be listed for the intended use.

4.0 PERFORMANCE CHARACTERISTICS

4.1 Fire Resistance Rating: The fire door assemblies, vertical rolling curtain shutters, and horizontal rolling steel fire and smoke shutters recognized in this report have fire resistance ratings reported in Table 2 of this report when tested in accordance with UL 10B.

4.2 Smoke and Draft Control Assemblies: The fire door assemblies noted in Table 2 of this report have qualified as smoke and draft control assemblies in accordance with the Codes and Code sections as outlined in Table 1. The

assemblies have air leakage rates of less than 3.0 cubic feet per minute per square foot of assembly area at 0.10 inch water pressure differential when tested in accordance with UL 1784 without the use of an artificial bottom seal. When installed using the manufacturer-provided brushes, seals, and/or sweeps, the assemblies may be installed in areas where pressurization is used to control smoke movement in accordance with Section 4.3.2 of NFPA 105 and for hoistway opening protection or lobby doorways as allowed in Chapter 30 of the IBC. For installations exclusive of hoistway opening protection and lobby doorways, and where pressurization is not used to control smoke movement, seals at the bottom edges of the assemblies are optional.

4.3 Temperature Rise: The fire door assemblies identified in Table 2 of this report as having a maximum temperature rise rating of “not more than 450° F” above ambient at the end of a 30-minute fire test exposure are in compliance with IBC Section 716.2.2.3, for doors in interior exit stairways and ramps and exit passageways.

4.4 Horizontal Rolling Steel Fire and Smoke Shutter: The McKEON horizontal rolling steel fire and smoke shutter is not intended for use as a fire door assembly or as a floor fire door horizontal assembly and is included in this report as an alternative method of construction per IBC Section 104.11 and IFC Section 104.10. The shutter has been tested in the horizontal orientation and meets the requirements of UL 10B.

5.0 INSTALLATION

5.1 General: The McKEON fire doors, rolling steel doors, rolling curtain shutters, and accordion doors recognized in this report must be installed in accordance with the McKEON 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 Oversized Fire Door Assemblies: When a fire resistance rating is required for an opening exceeding the allowed size as described in Table 2 of this report, doors may be installed when use is approved by the Code Official having jurisdiction, provided that the oversized fire door assembly complies with oversized door labeling and





certification requirements in accordance with IBC Section 716.2.9.2.

5.3 Smoke and Draft-control Fire Door Assemblies: The door assemblies described in Table 2 of this report, when labeled with an “S” rating, must include the manufacturer’s supplied perimeter brush-type gaskets and neoprene or fabric seals in accordance with the door manufacturer’s installation instructions, and as per the assembly listing. Installation and maintenance of smoke control doors must be in accordance with NFPA 105.

5.4 McKEON Horizontal Rolling Fire and Smoke Shutter: The horizontal shutter is intended for use as a protection device to compartmentalize vertical open spaces of two stories or less in accordance with IBC Section 712.1.12 and Section 404.5 and having no requirement for Smoke Control Systems as defined in IBC Section 909. The shutter is not intended to comply with IBC Section 711 as a Horizontal Assembly. The shutter is not intended to be a means of egress and is intended for applications that, when closed, does not block means of egress. Approval for use is at the discretion of the building official.

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 Approved releasing devices, closing devices, door operators, fire exit hardware, and panic hardware must be installed as is required by the applicable Code.

6.3 Where applicable, side-swinging egress doors within the assembly must swing in the direction of egress travel, provide clear opening widths, and comply with opening forces as required by the applicable Code. Side-swinging egress doors must be listed and labeled fire doors in compliance with UL 10C with equivalent fire resistance rating to the parent assembly.

6.4 Opening sizes must not be greater than the size limitations specified in the applicable Code sections referenced in this report or Table 2 of this report, whichever is less.

6.5 Assemblies used to protect openings as fire resistance rated door assemblies and/or smoke and draft control assemblies must be maintained in accordance with Sections 108 and 705 of the IFC and Chapter 5 of NFPA 105 and NFPA 80, as applicable. Annual inspections must be in accordance with Section 5.2 of NFPA 105 and NFPA 80, as applicable.

6.6 The McKEON door products recognized in this report are manufactured under a quality control program with inspections by Intertek Testing Services NA, Inc.

7.0 SUPPORTING EVIDENCE

7.1 Reports of tests in accordance with NFPA 252, UL 10B, UL 10C, CAN/ULC S104, and UL 1784.

7.2 Reports of tests in accordance with the means of egress door test requirements of IBC Section 1010.3.3.

7.3 Quality Control Manuals and manufacturer’s published installation instructions.

7.4 Intertek Listing Reports found on the [Intertek Directory of Building Products](#).

- [McKEON Series AC8000 Accordion Fire Door Systems With or Without Integral Proprietary Swing Doors](#)
- [McKEON Series S4000, S9000, and S7000 Side Coiling and Side Acting Steel Fire Door \(Slats\) with or without Integral Proprietary Swing Doors](#)
- [McKEON Series T2000/T5000/TU5000 Vertical Rolling Steel Fire Door with Integral Proprietary Swing Doors](#)
- [McKEON Vertical Rolling Steel Doors, Models – CFS, FSFD, FSFD-IS, FSFD-STC, FSFD-TR, and Dynamic 110F](#)
- [McKEON Horizontal Rolling Steel Fire and Smoke Shutter](#)
- [McKEON D400 90 Minute Opening Protective Assembly with Hose Stream](#)

8.0 IDENTIFICATION

The McKEON door products recognized in this report are identified with the manufacturer’s name (McKEON), address and telephone number, the product name, the Intertek Mark as shown below, and the Code Compliance Research Report number (CCRR-1086).





In addition to the above identification requirements, McKEON listed fire door products referenced in this report are also required to have a permanent label with the Warnock Hersey Certification Mark shown below, the applicable test standards (UL 10B, NFPA 252, and CAN/ULC S104), the serial number, the words "DO NOT COVER OR REMOVE THIS LABEL", and the words "SEE INSTALLATION INSTRUCTIONS".



When permitted to apply a smoke and draft control label, the labels must contain the letter "S" with the statement "Also Meets Smoke & Draft Control."

Optional label information: Temperature transmission rate at 30 minutes as indicated in Table 2.

9.0 OTHER CODES

9.1 FLORIDA BUILDING CODE: The McKEON fire doors, rolling steel doors, rolling curtain shutters, and accordion doors 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:

- Use of the McKEON products for compliance with the High-Velocity Hurricane Zone (HVHZ) provisions has

not been evaluated and is outside the scope of this Research Report.

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 fire doors, rolling steel doors, rolling curtain shutters, and accordion doors 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:

- Use of the McKEON products for compliance with the Wildland-Urban Interface (WUI) provisions of CBC Chapter 7A has not been evaluated and is outside the scope of this Research Report.

9.3 CITY OF LOS ANGELES BUILDING CODE: The McKEON fire doors, rolling steel doors, rolling curtain shutters, and accordion doors 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:

- Use of the McKEON products for compliance with the Wildland-Urban Interface (WUI) provisions of Chapter 7A has not been evaluated and is outside the scope of this Research Report.
- After installation, smoke control systems shall be tested in accordance with LABC 909.3.1.
- Smoke control systems shall be retested semi-annually in accordance with LABC 909.3.2.

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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.





TABLE 1a – PROPERTIES EVALUATED

VERTICAL ROLLING STEEL DOORS, SIDE COILING FIRE DOORS, and ACCORDION DOORS			
PROPERTY	APPLICABLE CODE SECTIONS ¹		
	IBC; CBC; LABC	IFC; CFC; LAFC	FBC
Fire resistance	716	-	716
Smoke and draft control	710.5.2.2 716.2.1.4 716.2.2.1.1 909	909	710.5.2.2 716.5.3.1
Means of egress	1010	1010	1010

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

TABLE 1b – PROPERTIES EVALUATED

HORIZONTAL ROLLING SHUTTERS				
PROPERTY	APPLICABLE CODE SECTIONS ¹			
	IBC; CBC	LABC	IFC; CFC; LAFC	FBC
Alternative Materials, Designs and Methods of Construction	104.11	104.2.6	104.10	104.11

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

TABLE 1c – PROPERTIES EVALUATED

VERTICAL ROLLING CURTAIN SHUTTERS		
PROPERTY	APPLICABLE CODE SECTIONS ¹	
	IBC; CBC; LABC	FBC
Fire resistance	716	716
Smoke and draft control	710.5.2.2 716.2.1.4 909	710.5.2.2

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





TABLE 2 – FIRE DOOR RATINGS AND SIZE LIMITATIONS

Door Type	Model	Fire Door Rating (Hours)	Temperature Rise Rating	Maximum Opening Sizes		
				Area (sq. ft.)	Width	Height
Vertical Rolling Steel Doors ³	CFS	3	-	156	13'-0"	12'-0"
	FSFD	4	-	156	13'-0"	12'-0"
	FSFD-IS	4	-	156	13'-0"	12'-0"
	FSFD-STC	4	-	156	13'-0"	12'-0"
	FSFD-TR (2 layer) ¹	4	Not more than 450° F	156	13'-0"	12'-0"
	FSFD-TR (1 layer) ²	1-1/2	Not more than 650° F	156	13'-0"	12'-0"
	Dynamic 110F	4	-	156	13'-0"	12'-0"
	T2000	3	-	156	13'-0"	12'-0"
	T5000	3	-	156	13'-0"	12'-0"
	T2000-IS	3	-	156	13'-0"	12'-0"
	T5000-IS	3	-	156	13'-0"	12'-0"
	T2000-TR (1 layer) ²	1-1/2	Not more than 650° F	156	13'-0"	12'-0"
	T5000-TR (1 layer) ²	1-1/2	Not more than 650° F	156	13'-0"	12'-0"
TU5000	3	-	156	13'-0"	12'-0"	
Vertical Rolling Curtain Shutters ³	D400	1-1/2	-	120	12'-0"	10'-0"
Side-Coiling Fire Doors ⁴	S4000	3	-	135	13'-6"	10'-0"
	S9000	3	-	135	13'-6"	10'-0"
	S7000 Series	3	-	135	13'-6"	10'-0"
	S4000-IS	3	-	135	13'-6"	10'-0"
	S9000-IS	3	-	135	13'-6"	10'-0"
	S7000-IS Series	3	-	135	13'-6"	10'-0"
	S4000-TR (2 layer) ¹	3	Not more than 450° F	135	13'-6"	10'-0"
	S4000-TR (1 layer) ²	1-1/2	Not more than 650° F	135	13'-6"	10'-0"
	S9000-TR (1 layer) ²	1-1/2	Not more than 650° F	135	13'-6"	10'-0"
	S7000-TR (2 layer) ¹	3	Not more than 450° F	135	13'-6"	10'-0"
	S7000-TR (1 layer) ²	1-1/2	Not more than 650° F	135	13'-6"	10'-0"
Accordion Doors ⁴	AC8000 Series	3	-	130	13'-0"	10'-0"
Horizontal Rolling Shutters	H200, H200-IS	2	-	200	12'-0"	16'-8"

¹ Temperature rise model when used as back-to-back pairs – Rise in temperature not more than 450° F (250°C) above ambient after first 30 minutes of fire exposure.

² Temperature rise model when used as single unit – Rise in temperature not more than 650° F (361°C) above ambient after first 30 minutes of fire exposure. When used in assembly, swinging egress doors must also be listed and labeled temperature rise doors.

³ These products have a leakage less than 3.0 cfm/ft² @ 0.10 inch H₂O when evaluated without an artificial bottom seal. To achieve this rating, they must be installed with the manufacturer-provided brushes and a neoprene bulb seal at the bottom bar. See Section 4.2.

⁴ These products have a leakage less than 3.0 cfm/ft² @ 0.10 inch H₂O when evaluated without an artificial bottom seal. To achieve this rating, they must be installed with the manufacturer-provided brushes and sweeps. See Section 4.2

