Code Compliance Research Report
CCRR-0500

Issue Date: 08-16-2023
Revision Date: 08-18-2025
Renewal Date: 08-31-2026

DIVISION: 08 00 00 – OPENINGS
Section: 08 11 00 – Metal Doors and Frames
Section: 08 30 00 – Specialty Doors and Frames

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REPORT SUBJECT:
SafeSpace SS500 Rolling Door Assembly
SafeSpace SS500F Rolling Door Assembly
SafeSpace SS500X Rolling Door Assembly

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:
- 2024 and 2021 *International Building Code®* (IBC)
- 2023 and 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 Code editions noted. Section numbers in earlier editions may differ.

1.2 The SafeSpace rolling door assemblies have been evaluated for the following properties (see Table 1):
- Wind Resistance
- Impact Resistance
- Fire Resistance (SS500F only)

1.3 The SafeSpace SS500 rolling door assembly has been evaluated for the following uses:
- Use as an impact protective system for tornado or hurricane shelters in accordance with IBC 423
- Use as an exterior door assembly where water penetration and air leakage resistance are not required

1.4 The SafeSpace SS500F rolling door assembly has been evaluated for the following uses:
- Use as a fire door assembly in accordance with IBC 716.2
- Use as an impact protective system for tornado or hurricane shelters in accordance with IBC 423
- Use as an exterior door assembly where water penetration and air leakage resistance are not required

1.5 The SafeSpace SS500X rolling door assembly has been evaluated for the following uses:
- Use as an impact protective system for tornado or hurricane shelters in accordance with IBC 423
- Use as a glazed opening protective in accordance with IBC 1609.2
- Use as an exterior door assembly where water penetration and air leakage resistance are not required

2.0 STATEMENT OF COMPLIANCE

The SafeSpace rolling door 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 through 1.5, when installed as described in this report, including the Conditions of Use stated in Section 6.

2.1 2024 IBC Evaluation Reports

The Intertek CCRR is an *Evaluation Report* for approval of an alternate material, design, or method of construction in accordance with Section 104.2.3.6.1 of the 2024 IBC.

3.0 DESCRIPTION

3.1 SafeSpace SS500: The SafeSpace SS500 is a vertical-coiling, rolling door assembly consisting of major components that include cold-formed steel slats, a bottom bar, side guides, a hood and barrel assembly, a motor drive unit, and a control panel. The SS500 uses ID profile slats, which are 3 inches tall by 1 1/2 inches thick and may optionally be filled with polyisocyanate, mineral wool, or fiberglass insulation.

3.2 SafeSpace SS500F: The SafeSpace SS500F is a fire-rated, vertical-coiling, rolling door assembly consisting of major components that include cold-formed steel slats, a bottom bar, side guides, a hood and barrel assembly, a motor drive unit, a release device, and a control panel. The SS500F uses ID profile slats, which are 3 inches tall by 1 1/2 inches thick and may optionally be filled with mineral wool or fiberglass.

3.3 SafeSpace SS500X: The SafeSpace SS500X is a vertical-coiling rolling door assembly consisting of major components that include extruded slats, a bottom bar, side guides, a hood and barrel assembly, a motor drive unit, and a control panel. The SS500X uses EX profile slats, which are 3 inches tall by 1 1/4 inches thick.

4.0 PERFORMANCE CHARACTERISTICS

4.1 Fire Protection Rating: The SafeSpace SS500F has a 4-hour fire protection rating in accordance with UL 10B, when installed in masonry construction. Assemblies with opening sizes greater than 13 feet in width, 12 feet in height, or 156 square feet in area require an oversize certificate, 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.

4.2 Storm Shelter Opening Protection: The SafeSpace rolling door assemblies have impact ratings of 15 lbs @ 100 mph, tornado design pressure ratings of ±252 psf, and hurricane design pressure ratings of ±201 psf when tested in accordance with ICC 500. The door assemblies must be installed on the protected side of the storm shelter envelope. The permitted opening sizes for the SS500 and SS500F are 4’-4” wide by 4’-0” high through 16’-4” wide by 22’-0” high. The permitted opening sizes for the SS500X are 2’-9-1/2” wide by 3’-6” high through 20’-3-1/2” wide by 22’-0” high.

In accordance with Section 603.1 of ICC 500, the fire-rated SS500F may be installed in walls separating the storm shelter from other areas of the host building. The SS500 and SS500X are limited to installation in exterior shelter walls or installations complying with one of the exceptions to Section 603.1.

4.3 Glazed Opening Protection: The SafeSpace SS500X has an impact rating of 9 lbs @ 80 ft/sec and a design pressure rating of ±120 psf when tested in accordance with DASMA 108, DASMA 115, TAS 201, TAS 202, and TAS 203.

5.0 INSTALLATION

5.1 General:

The SafeSpace rolling door 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 Anchorage: The door assembly side guides must be anchored with minimum 5/8” diameter bolts. Maximum anchor spacing for the SS500 and SS500F is 16 inches on-center and maximum anchor spacing for the SS500X is 12 inches on-center.

The tested anchorage condition for steel substrates utilized A325 bolts. The tested anchorage condition for concrete substrates utilized Simpson Strong-Bolt 2 wedge anchors with an embedment depth of 5-1/8 inches, an edge distance of 7-1/2 inches to the opening, and nominal 4000-psi strength concrete. Alternate anchorage that maintains the maximum on-center spacing shall be designed by a registered design professional for pull-out and shear to resist the wind loads in accordance with Section 304 of ICC 500.

5.3 Supporting Structure: Structural adequacy of the supporting structure is outside the scope of this report and shall be determined by a registered design professional.

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 Assembly opening sizes must comply with the limits in Section 4.1 and 4.2 of this report.

6.4 Fire-rated SS500F assemblies must be maintained and inspected in accordance with Chapter 5 of NFPA 80. In accordance with Section 603.1.1 of ICC 500, fire doors in fire barriers required solely for compliance with ICC 500 shall not be required to be self- or automatic-closing.

6.5 SafeSpace rolling door assemblies installed in storm shelters shall be evaluated and maintained in accordance with Section 113 of ICC 500.

6.6 The SafeSpace rolling door assemblies have not been evaluated for water penetration or air leakage and are not recognized for installation where water penetration or air leakage resistance are required.

6.7 The SafeSpace rolling door 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 in accordance with DASMA 108-2017, DASMA 115-2017, ICC 500-2020, TAS 201-94, TAS 202-94, TAS 203-94, and UL 10B (2015)

7.2 Intertek Listing Reports McKEON – SafeSpace SS500 and SS500F Series Tornado & Hurricane Resistant Doors and McKEON – SafeSpace SS500X Series Tornado & Hurricane Resistant Door, on the Intertek Directory of Building Products.

8.0 IDENTIFICATION

The SafeSpace rolling steel doors are identified with the manufacturer's name (McKEON), the product name, the windstorm hazard type(s), the design tornado pressure rating and/or design wind pressure rating, the impact rating(s), the Warnock Hersey Mark as shown below, and the Code Compliance Research Report number (CCRR-0500).



In addition to the above identification requirements, when the SS500F is used as an assembly requiring a fire-protection rating, the unit must also bear a permanent label with the Warnock Hersey Certification Mark as shown below, the applicable test standards (UL 10B, NFPA 252, and CAN/ULC S104), a serial number, the words "DO NOT COVER OR REMOVE THIS LABEL", and the words "SEE INSTALLATION INSTRUCTIONS."



9.0 OTHER CODES

9.1 FLORIDA BUILDING CODE

The SafeSpace rolling door 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:

9.1.1 SafeSpace SS500X:

- The SS500X complies with Section 423 for use in a hurricane or tornado storm shelter, as described in Section 4.2 of this report.
- The SS500X complies with the HVHZ provisions in Sections 1609.1.2, 1625, and 1626 for use as a glazed opening protective in Risk Category IV – Essential Facility buildings or structures.
- The SS500X has not been evaluated for air leakage and may not be installed where an air leakage rating is required.
- The SS500X has not been evaluated for water penetration and must be installed in accordance with Exception 1 or 2 of Section 1709.5.2.

9.1.2 SafeSpace SS500 and SS500F:

- The SS500 and SS500F comply with Section 423 for use in a hurricane or tornado storm shelter, as described in Section 4.2 of this report.
- The SS500 and SS500F have not been evaluated for air leakage and may not be installed where an air leakage rating is required.
- The SS500 and SS500F have not been evaluated for water penetration and must be installed in accordance with Exception 1 or 2 of Section 1709.5.2.
- The SS500 and SS500F have not been evaluated for use as a glazed opening protective in accordance with Section 1609.1.2.

- Use of the SS500 or SS500F for compliance with the High-Velocity Hurricane Zone (HVHZ) provisions has not been evaluated and is outside the scope of this 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 SafeSpace rolling door assemblies, described in Sections 2.0 through 7.0 of this Research Report, comply with the *California Building Code,* for the editions indicated in Section 1.1 of this report, subject to the following conditions:

9.2.1 SafeSpace SS500X:

- The SS500X complies with Section 708A.3 for use as an exterior door within a Wildland Urban Interface (WUI) area when installed in compliance with Section 708A.4.
- The SS500X complies with Section 423 for use in a hurricane or tornado storm shelter, as described in Section 4.2 of this report.
- The SS500X complies with Sections 1609.2 and 1709.5.2 for use as a glazed opening protective in windborne debris regions.
- The SS500X has not been evaluated for water penetration or air leakage and may not be installed where water penetration or air leakage resistance is required.

9.2.2 SafeSpace SS500 and SS500F:

- The SS500 and SS500F comply with Section 708A.3 for use as an exterior door within a Wildland Urban Interface (WUI) area when installed in compliance with Section 708A.4.
- The SS500 and SS500F comply with Section 423 for use in a hurricane or tornado storm shelter, as described in Section 4.2 of this report.
- The SS500 and SS500F have not been evaluated for use as a glazed opening protective in accordance with Section 1609.2.
- The SS500 and SS500F have not been evaluated for water penetration or air leakage and may not be installed where water penetration or air leakage resistance is required.

9.3 CITY OF LOS ANGELES BUILDING CODE

The SafeSpace rolling door assemblies, described in Sections 2.0 through 7.0 of this Research Report, comply with the *City of Los Angeles Building Code,* for the editions indicated in Section 1.1 of this report, subject to the following conditions:

9.3.1 SafeSpace SS500X:

- The SS500X complies with Section 708A.3 for use as an exterior door within a Wildland Urban Interface (WUI) area when installed in compliance with Section 708A.4.
- The SS500X complies with Section 423 for use in a hurricane or tornado storm shelter, as described in Section 4.2 of this report.
- The SS500X complies with Sections 1609.2 and 1709.5.2 for use as a glazed opening protective in windborne debris regions.
- The SS500X has not been evaluated for water penetration or air leakage and may not be installed where water penetration or air leakage resistance is required.

9.3.2 SafeSpace SS500 and SS500F:

- The SS500 and SS500F comply with Section 708A.3 for use as an exterior door within a Wildland Urban Interface (WUI) area when installed in compliance with Section 708A.4.
- The SS500 and SS500F comply with Section 423 for use in a hurricane or tornado storm shelter, as described in Section 4.2 of this report.
- The SS500 and SS500F have not been evaluated for use as a glazed opening protective in accordance with Section 1609.2.
- The SS500 and SS500F have not been evaluated for water penetration or air leakage and may not be installed where water penetration or air leakage resistance is required.

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 1 - PROPERTIES EVALUATED

PROPERTY	APPLICABLE CODE SECTIONS[1]		
	IBC	CBC; LABC	FBC
Wind Resistance	1709.5.2	1709.5.2	1709.5.2
Impact Resistance	1609.2	1609.2	1609.1.2 1625 1626
Storm Shelter Use	423	423	423
Fire Resistance	716.2	716.2	716.5
Wildland-Urban Interface Areas	NA	708A.3 708A.4	NA

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

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