

ICC-ES Evaluation Report**ESR-2300**

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DIVISION: 08 00 00—OPENINGS**Section: 08 11 73—Sliding Metal Fire Doors****Section: 08 30 00—Specialty Doors and Frames****Section: 08 35 13.23—Accordion Folding Fire Doors****REPORT HOLDER:**

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EVALUATION SUBJECT:**TRANZFORM® ACCORDION FOLDING FIRE DOORS****1.0 EVALUATION SCOPE****Compliance with the following code:**2009 *International Building Code*® (IBC)**Properties evaluated:**

- Fire resistance
- Smoke and draft control
- Means of egress

2.0 USES

Cornell Iron Works, Inc., TranZform® Accordion Folding Fire Door assemblies are used as protection for horizontal openings through fire-resistance-rated wall assemblies, as smoke- and draft-control door assemblies, and as means-of-egress doors.

3.0 DESCRIPTION**3.1 Cornell Iron Works TranZform® Accordion Folding Fire Door Assemblies:**

Cornell Iron Works TranZform® Accordion Folding Fire Doors are horizontally single-slide or bi-parting folding fire door assemblies consisting of two independently suspended and parallel steel accordion folding curtains separated by a cavity. The curtains are constructed of painted No. 24 MSG corrugated steel with 4¹/₂-inch-wide (114.3 mm) interconnected slats. A roll formed metal door lead post connects to and closes off the movable end (strike edge) of the door. The door includes top and bottom insulation strips. The striker plate intended for installation on the strike side of the wall is “Y shaped” to receive the nose of the door lead post. When fully closed, the lead post engages the striker plate with a 3¹/₂- to 3³/₄-inch

(88.9 to 95.25 mm) overlap. The header track and drive components consist of two center chain guide track guards and two door header track rails. For assemblies requiring up to a three-hour fire-resistance rating, the top sweep is a gray intumescent sweep material designated by part number R202167A. The three-hour door has a track made of steel and has a 1¹/₄-inch (32 mm) wheel on the hanger pin. The 1¹/₂-hour or less doors have a track made of aluminum and a 1-inch (25mm) wheel on the hanger pin. The three-hour door also has a fusible link in the lead post.

3.2 Operation:

The electronically powered operating system includes a listed and labeled fire door operator consisting of a controller, door closer, releasing device, continuously charged battery backup power supply and drive motor assembly. The door is driven by a chain located in a guide track between the two header tracks in which the door panels travel. The controller is programmed to automatically move the door to a closed position upon receiving a signal from fire and or smoke sensing devices supplied by others. The door assemblies include a manually activated release device that allows the doors to open within 10 seconds, in accordance with Item 8 of IBC Section 1008.1.4.3, to a maximum opening width of 88 inches (2235 mm) for single-side pocket units or to a maximum of 178 inches (4521 mm) within 10 seconds for bi-parting units. After opening, the door automatically closes. The entire fire door operating system, the predesignated minimum opening width and the automatic door closure timing must be approved by the code official. The electrically powered operating system must include limit controls and sensors that detect, signal and control the door's open/close position.

3.3 Fire-resistance Rating:

Cornell Iron Works TranZform® Accordion Folding Fire Doors have demonstrated a fire-resistance rating of 3 hours (180 minutes), 1¹/₂ hours (90 minutes), 1 hour (60 minutes), ³/₄ hour (45 minutes), ¹/₂ hour (30 minutes), and ¹/₃ hour (20 minutes) for openings up to 11 feet wide by 9 feet high (3352.8 by 2743.2 mm) and up to 99 square feet (9.2 m²) in area. Differences in the doors for various ratings are noted in Section 3.1. Doors any width and up to 23 feet high (7010.4 mm) are eligible for UL oversize labels or certificates in accordance with IBC Section 715.4.6.2.

3.4 Smoke and Draft Control Door Assemblies:

Cornell Iron Works TranZform® Accordion Folding Fire Door assemblies comply as smoke- and draft-control assemblies in accordance with IBC Section 715.4.3 when installed with listed and labeled gasketing.

3.5 Opening Protection:

Cornell Iron Works TranZform® Accordion Folding Fire Doors are recognized for use in fire walls in accordance with IBC Section 706.8, for use in fire barrier walls in accordance with IBC Section 707.6 (see Section 5.3 for use in exit enclosures and exit passageways), for use in shaft enclosures in accordance with IBC Section 708.7, for use in fire partition walls in accordance with IBC Section 709.6, for use in smoke barrier walls in accordance with IBC Section 710.5, and for use in smoke partition walls in accordance with IBC Section 711.5.

3.6 Means of Egress:

Cornell Iron Works TranZform® Accordion Folding Fire Doors are recognized for use as a component of a means-of-egress system in accordance with IBC Section 1008.1.4.3 in other than Group H occupancies.

4.0 INSTALLATION

4.1 General:

Cornell Iron Works TranZform® Accordion Folding Fire Door assemblies must be installed in accordance with applicable code requirements for the type and location of the wall in which they are to be used. The TranZform® door and frame (tracks and strike plate assemblies) must be installed in accordance with the manufacturer's published installation instructions and this evaluation report. Installation of the door assemblies and operating systems, including the frame, controller, closing and release devices, and anchorage must be in accordance with NFPA 80, as noted in IBC Sections 715.4, 715.4.8.2, and 1008.1.4.3, as applicable.

4.2 Oversized Doors:

Where a fire-resistance rating is required, doors with a width exceeding 11 feet (3352 mm) or a height exceeding 9 feet (2743 mm) may be installed when approved by the code official. Oversized fire doors must bear an oversized fire door label or must be provided with a certificate of inspection from an approved testing agency as noted in IBC Section 715.4.6.2.

4.3 Smoke- and Draft-control Door Assembly:

Installation instructions indicating the proper method of installing the Cornell Iron Works TranZform® Accordion Folding Fire Door smoke-and draft-control door assembly must be attached to, or packaged with, each assembly. The installation instructions must cover the size, design, and construction of the door and frame assembly for specific air leakage rates.

5.0 CONDITIONS OF USE

The Cornell Iron Works TranZform® Accordion Folding Fire Door assemblies described in this report comply with, or are suitable alternatives, to what is specified in, the code indicated in Section 1.0 of this report, subject to the following conditions:

- 5.1 TranZform® Accordion Folding Fire Door assemblies must be installed in accordance with the manufacturer's published installation instructions, the IBC, the fire door listing, and this report. Where a conflict exists, this report governs.
- 5.2 TranZform® Accordion Folding Fire Doors serving as opening protectives in fire walls are limited in area in accordance with Section 706.8 of the IBC.
- 5.3 In buildings equipped throughout with an automatic sprinkler system installed in accordance with IBC Section 903.3.1.1 or 903.3.1.2, TranZform® Accordion Folding Fire Doors are recognized for use as doors in exit enclosures and in exit passageways per IBC Section 715.4.4.
- 5.4 TranZform® Accordion Folding Fire Doors are fabricated in Mountain Top, Pennsylvania, under a quality control program with inspections by Underwriters Laboratories, Inc (AA-668).
- 5.5 Installation of smoke doors must be in accordance with NFPA 105.

6.0 EVIDENCE SUBMITTED

- 6.1 Reports of tests in accordance with UL 10B, UL 1784, and NFPA 105.
- 6.2 Reports of tests demonstrating compliance with IBC Section 1008.1.4.3.
- 6.3 Quality control documentation.

7.0 IDENTIFICATION

Cornell Iron Works TranZform® Accordion Folding Fire Door assemblies bear a permanently affixed label with the manufacturer's name (Cornell Iron Works, Inc.), the name of the inspection agency (Underwriters Laboratories Inc), and the fire-resistance ratings (3, 1¹/₂, 1, 3³/₄, 1¹/₂, and 1¹/₃ hours). The labels must also specify the evaluation report number (ESR-2300), and must comply with NFPA 80. All labels must be applied at the factory.

Cornell Iron Works TranZform® Accordion Folding Fire Doors used as smoke- and draft-control door assemblies must be labeled as noted above and also include the letter "S" on the rating label of the door. This marking must also indicate that the door and frame assembly are in compliance when listed or labeled gasketing is also installed.

Cornell Iron Works TranZform® Accordion Folding Fire Doors, when oversized, must be labeled as noted in Section 4.2 of this report.