

SECTION 08332 - SIDE ACTING FIRE DOOR SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary and Division 1 specification sections apply to this Section.

1.2 SUMMARY

- A. Section includes:
 - 1. Side acting fire and smoke rated doors with integral emergency egress door.
- B. Related Section:
 - 1. Division 5 Sections.
 - 2. Division 8 Sections.
 - 3. Division 9 Sections.
 - 4. Division 16 Sections.

1.3 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Overhead coiling doors shall withstand the effects of earthquake motions determined according to SEI/ASCE 7.

1.4 SUBMITTALS

- A. Product Data: For each type and size of door and accessory.
- B. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 2. Wiring Diagrams: For power, signal, and control wiring.
- C. Selection Samples: For each exposed product, provide manufacturer's standard color palette for color to be selected by Architect.
- D. Verification Samples: For each exposed product and for each color and texture selected.

- E. Seismic Qualification Certificates: For overhead coiling doors, accessories, and components, from manufacturer.
- F. Oversize Construction Certification: For door assemblies required to be fire-rated and that exceed size limitations of labeled assemblies.
- G. Operation and Maintenance Data.
- H. Warranty.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for both installation and maintenance of units required for this Project.
- B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at as close to neutral pressure as possible according to NFPA 252 or UL 10B.
 - 1. Smoke Control: Provide doors that are listed and labeled with the letter "S" on the fire-rating label by a qualified testing agency for smoke- and draft-control based on testing according to UL 1784; with maximum air-leakage rate of 3.0 cfm/sq. ft. of door opening at 0.10 inch wg for both ambient and elevated temperature tests.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

PART 2 - PRODUCTS

2.1 SIDE ACTING FIRE & SMOKE RATED DOORS WITH INTEGRAL EMERGENCY EGRESS DOOR

- A. Basis of Design Manufacturer: Side coiling fire and smoke rated doors with integral emergency egress door; McKeon Door Company "Safescape model S7700-PC."
 - 1. Fire Rating: 3 hours.

2.2 MATERIALS

- A. General: Each unit shall consist of an interlocking slat curtain designed to travel in a horizontal plane, smoothly and without binding. Curtain shall be driven to the open and closed position by a positive action sprocket and integral endless drive chain system.
 - 1. Curtain: Galvanized, interlocking, steel slats with an approximate cross section not less than 3" wide by 7/8" deep.
- B. Leading Edge: Curtain shall be furnished with a structural steel member of tubular design to provide stiffness, limit deflection and provide for a tight fitting closure.

- C. Receiving Edge: Shall be fabricated of a steel member with sufficient depth, designed to accept the leading edge and form a tight fitting closure when the door is the fully closed position.
- D. Swinging Emergency Egress Door: Incorporated within the curtain shall be a swinging type steel door designed and built as an integral part of the fire door's assembly.
 - 1. Door Frame: Shall be an all-steel unit type ASTM A366 hot rolled steel, 14 gauge with the same labeled fire resistance rating as specified for door.
 - 2. Door Assembly: Complete with door, hinge, and locking channel mechanism. 20 gauge stretcher leveled, electro galvanized and bonderized steel faces.
 - 3. Hardware:
 - a. Fire Exit Device: Flush mounted integral type fire exit device on one face and with pull handle on opposite face of the swinging door.
 - b. Closer: Shall be concealed type.
- E. Head Track: Shall be of not less than 1/8" thick steel and shall be provided with an integral locking bar. The faying surface shall not be less than 38% of the flat plate area when the door is in the closed position. Locking bar shall lock and retain the curtain in place.
- F. Perimeter Smoke Seals: Provide UL classified smoke seals internal to head track and on both sides of the fire door's floating jamb.
- G. Counterbalance Unit: The fire door shall be counterbalanced by means of adjustable steel counterweight system that is to be located in an area as indicated in the construction drawings.
- H. Electric Motor Operator: Fire door shall be provided with a compact power unit designed and built by the door manufacturer. Operator shall be equipped with an adjustable screw-type limit switch to break the circuit at termination of travel. High efficiency planetary gearing running in an oil bath, shall be furnished together with a centrifugal governor, magnetic operated brake and a fail-safe magnetic release device, completely housed to protect against damage, dust and moisture. An efficient overload protection device, which will break the power circuit and protect against damage to the motor windings shall be integral with the unit. Operator is to be housed in a NEMA type 1 enclosure.
 - 1. Motor: Shall be intermediate duty, thermally protected, ball bearing type with a class A or better insulation. Horsepower of motor is to be 1/3hp minimum or of manufacturer's recommended size, which ever is greater.
 - 2. Starter: Shall be size "0" magnetic reversing starter, across the line type with mechanical and electrical interlocks, with 10 amp continuous rating and 24 volt control circuit.
 - 3. Reducer: Planetary gear type, 80% efficiency minimum.
 - 4. Brake: Magnetically activated, integral within the operator's housing.
 - 5. Control Station: Provide flush mount key switch control station marked open, close and stop.
- I. Self-Closing Mechanism: The fire door is to be designed with a centrifugal governor as an integral part of the operator's construction. The automatic release mechanism shall be activated by smoke detector or fire alarm. When activated the door is released and begins to close due to the captured counterweight force. The speed of the door shall

be governed by a centrifugal governor, designed to match the normal operating speed of the door, at a rate of not greater than 9" per second or less than 6" per second. The fire door shall self-close under its own power. Battery back-up systems to achieve self-closing are not acceptable.

- J. Magnetic Release with 10 Second Time Delay: A fail-safe magnetic release device shall be built into the operator as an integral part of the release mechanism. When power is interrupted to the release mechanism by the smoke detector or fire alarm, the door shall begin to self-close. In the event of power failure the time delay shall prevent the fire door from closing for a period of 10 seconds. Once the 10 seconds have lapsed, the fire door shall self-close without the aid of electricity or battery back-up systems. Once power has been restored the automatic reset time delay as well as the fire door shall reset themselves.
- K. Obstruction Sensing Device: The fire door shall be designed with a radio activated obstruction sensing safety edge. In the event that the safety edge meets an obstruction during the normal closing operation, the door shall stop, reverse and return to the open position. In the event the safety edge meets an obstruction during the self-closing operation, the door shall reverse and attempt to close three times. In the event that the obstruction has not been removed during the third attempt, the door shall come to rest on the obstruction and once the obstruction has been removed the fire door shall continue to the fully closed position.
- L. Easy Trip Test Feature: The fire door shall be designed so that it may be trip tested simply by cutting power to the operator. By turning the power switch off, the door shall self-close. Once the fire door has satisfactorily closed, it shall be reset simply by turning the power back on. No ladders or tools shall be needed to reset the door or the time delay unit.
- M. Finish: After completion of fabrication, clean metal surfaces to remove dirt and chemically treat to provide for powder coat adhesion. Provide powder coat finish of color as selected by Architect from manufacturer's standard RAL powder coat selection chart.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates areas and conditions, with Installer present, for compliance with requirements for substrate construction and other conditions affecting performance of the Work.
- B. Verify dimensions taken at job site affecting work. Notify Architect if dimensions vary.
- C. Examine locations of electrical connections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Perform installation using only factory approved and certified representatives of the door manufacturer.
- B. Install overhead coiling doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; according to manufacturer's written instructions and as specified.
- C. Install door assemblies at locations shown in perfect alignment and elevation, plumb, level, straight and true.
- D. Install overhead coiling doors, hoods, and operators at the mounting locations indicated for each door.
- E. Install wiring in accordance with applicable local codes and the National Electrical Code Standard. Materials shall be UL listed.
- F. Fire-Rated Doors: Install according to NFPA 80.
- G. Smoke-Control Doors: Install according to NFPA 80 and NFPA 105.

3.3 ADJUSTING

- A. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.
- B. Lubricate bearings and sliding parts as recommended by manufacturer.
- C. Test shutter closing sequence when activated by building's fire alarm system. Reset shutter after successful test.

3.4 PROTECTION AND CLEANING

- A. Protect installed work.
- B. Remove, repair or replace damaged materials prior to Substantial Completion.
- C. Clean surfaces using manufacturer's cleaning recommendations.

3.5 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain overhead coiling doors.

END OF SECTION 08332