

SECTION 08331 - OVERHEAD COILING DOORS

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. Fire-rated counter doors.
- B. Related Sections:
 - 1. Division 5 Sections.
 - 2. Division 6 Sections including Division 06415, "Stone Countertops."
 - 3. Division 8 Sections.
 - 4. Division 9 Sections.
 - 5. 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 overhead coiling 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. Show locations of replaceable fusible links.
 - 3. 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 DOOR CURTAIN MATERIALS AND CONSTRUCTION

- A. Door Curtains: Fabricate overhead coiling-door curtain of interlocking metal slats, in a continuous length for width of door without splices. Unless otherwise indicated, provide slats of thickness and mechanical properties recommended by door manufacturer for performance, size, and type of door indicated.
- B. Bottom Bar for Counter Doors: Manufacturer's standard continuous channel or tubular shape, fabricated from metal to match curtain slats and finish.
- C. Astragal for Interior Doors: Equip each door bottom bar with a replaceable, adjustable, continuous, compressible gasket of flexible vinyl, rubber, or neoprene as a cushion bumper.
- D. Curtain Jamb Guides: Manufacturer's standard angles or channels and angles of same material and finish as curtain slats unless otherwise indicated, with sufficient depth and strength to retain curtain, to allow curtain to operate smoothly, and to

withstand loading. Slot bolt holes for guide adjustment. Provide removable stops on guides to prevent overtravel of curtain.

1. Smoke seals: UL tested; on each guide assembly.

2.2 COUNTER DOORS

- A. Integral Frame, Hood, and Fascia for Counter Door: Welded sheet metal assembly of the following sheet metal: Galvanized steel.

2.3 LOCKING DEVICES

- A. Locking Device Assembly: Fabricate with cylinder lock, spring-loaded dead bolt, operating handle, cam plate, and adjustable locking bars to engage through slots in tracks.
 1. Lock Cylinders: Provide cylinders standard with manufacturer and keyed to building keying system.
 2. Keys: Provide Two for each cylinder.

2.4 CURTAIN ACCESSORIES

- A. Smoke Seals: Equip each fire-rated door with smoke-seal perimeter gaskets for smoke and draft control as required for door listing and labeling by a qualified testing agency.
- B. Push/Pull Handles: Equip each push-up-operated or emergency-operated door with lifting handles on each side of door, finished to match door
- C. Automatic-Closing Device for Fire-Rated Doors: Equip each fire-rated door with an automatic-closing device that is inoperative during normal door operations and that has a governor unit complying with NFPA 80 and an easily tested and reset release mechanism designed to be activated by the following:
 1. Replaceable fusible links with temperature rise and melting point of 165 deg F interconnected and mounted on both sides of door opening.
 2. Building fire-detection and -alarm systems and manufacturer's standard door-holder-release devices.

2.5 COUNTERBALANCING MECHANISM

- A. General: Counterbalance doors by means of manufacturer's standard mechanism with an adjustable-tension, steel helical torsion spring mounted around a steel shaft and contained in a spring barrel connected to top of curtain with barrel rings. Use grease-sealed bearings or self-lubricating graphite bearings for rotating members.
- B. Brackets: Manufacturer's standard mounting brackets of either cast iron or cold-rolled steel plate.

2.6 ELECTRIC DOOR OPERATORS

- A. General: Electric door operator assembly of size and capacity recommended and provided by door manufacturer for door and operation-cycles requirement specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, solenoid-operated brake, clutch, remote-control stations, control devices, integral gearing for locking door, and accessories required for proper operation.
1. Comply with NFPA 70.
 2. Provide control equipment complying with NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6, with NFPA 70 Class 2 control circuit, maximum 24 V, ac or dc.
- B. Usage Classification: Electric operator and components capable of operating for not less than number of cycles per hour indicated for each door.
- C. Electric Motors: Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements specified in Division 11 Section "Common Motor Requirements for Equipment" unless otherwise indicated.
1. Electrical Characteristics:
 - a. Phase: Single phase.
 - b. Volts: [115] [208] [230] V.
 - c. Hertz: 60.
 2. Motor Type and Controller: Reversible motor and controller (disconnect switch) for motor exposure indicated.
 3. Motor Size: Minimum size as indicated. If not indicated, large enough to start, accelerate, and operate door in either direction from any position, at a speed not less than 8 in./sec. and not more than 12 in./sec., without exceeding nameplate ratings or service factor.
 4. Operating Controls, Controllers (Disconnect Switches), Wiring Devices, and Wiring: Manufacturer's standard unless otherwise indicated.
- D. Obstruction Detection Device: Equip motorized door with indicated external automatic safety sensor capable of protecting full width of door opening. For fire-rated doors, activation delays closing.
1. Sensor Edge: Automatic safety sensor edge, located within astragal or weather stripping mounted to bottom bar. Contact with sensor activates device. Connect to control circuit using manufacturer's standard take-up reel or self-coiling cable. Provide self-monitoring capability designed to interface with door operator control circuit to detect damage to or disconnection of sensing device.
- E. Remote-Control Station: Momentary-contact, three-button control station with push-button controls labeled "Open," "Close," and "Stop."
1. Interior units, full-guarded, surface-mounted, heavy-duty type, with general-purpose NEMA ICS 6, Type 1 enclosure.

- F. Emergency Manual Operation: Equip each electrically powered door with capability for emergency manual operation. Design manual mechanism so required force for door operation does not exceed 25 lbf.
- G. Emergency Operation Disconnect Device: Equip operator with hand-operated disconnect mechanism for automatically engaging manual operator and releasing brake for emergency manual operation while disconnecting motor without affecting timing of limit switch. Mount mechanism so it is accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.
- H. Motor Removal: Design operator so motor may be removed without disturbing limit-switch adjustment and without affecting emergency manual operation.
- I. Self-Closing Mechanism: The fire shutter 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 a fusible link, smoke detector or fire alarm. When activated the shutter is released and begins to close due to gravitational force. The speed of the shutter is governed by a centrifugal governor, designed to match the normal operating speed of the shutter, at a rate of not greater than 9" per second or less than 6" per second.
- 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 shutter shall begin to self-close. In the event of power failure the time delay shall prevent the fire shutter from closing for a period of 10 seconds. Once the 10 seconds have lapsed, the fire shutter shall self-close. Once power has been restored to the release mechanism the automatic reset time delay as well as the fire shutter shall automatically reset themselves.
- K. Easy Trip Test Feature: The fire shutter shall be designed so that it may be trip tested simply by cutting power to the operator. By turning the power switch off, the shutter shall self-close. Once the fire shutter has satisfactorily closed, it shall be reset simply by turning the power back on. No ladders or tools shall be needed to reset the shutter or the time delay unit.
- L. True Test Panel: Fire shutters shall be provided with a True Test panel. The test panel shall activate all the fire shutters to close via gravity not power and shall be in accordance with NFPA Bulletin 80. Only one test panel shall be required to test all the fire shutters on this project.

2.7 DOOR ASSEMBLY

- A. Counter Door: Overhead fire-rated coiling door formed with curtain of interlocking metal slats.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide McKeon Rolling Steel Door Company, Inc. "Auto-Set Model CFS-M-PC" or comparable product by one of the following:
 - a. Cookson Company.

- b. Mahon Door Corporation.
 - c. Overhead Door Corporation.
- B. Operation Cycles: Not less than 50,000.
- C. Fire Rating: 3 hours and with smoke control.
- D. Door Curtain Material: Galvanized steel.
- E. Door Curtain Slats: Flat profile slats of 1-1/4-inch center-to-center height.
- F. Curtain Jamb Guides: Galvanized steel with exposed finish matching curtain slats
- G. Hood: Match curtain material and finish.
 - 1. Shape: As shown on Drawings.
 - 2. Mounting: As shown on Drawings.
- H. Integral Frame, Hood, and Fascia for Counter Door: Galvanized steel.
 - 1. Mounting: As shown on Drawings.
- I. Sill Configuration for Counter Door: As indicated on Drawings.
 - 1. Stone: As indicated in Finish Schedule on Drawings.
- J. Locking Devices: Equip door with locking device assembly.
 - 1. Locking Device Assembly: Single-jamb side locking bars, operable from inside and outside with cylinders.
- K. Electric Door Operator:
 - 1. Usage Classification: Medium duty, up to 15 cycles per hour.
 - 2. Motor Exposure: Interior.
 - 3. Emergency Manual Operation: Push-up type.
 - 4. Obstruction-Detection Device: Automatic electric sensor edge on bottom bar; self-monitoring type.
 - 5. Remote-Control Station: Where shown on Drawings.
- L. Door Finish:
 - 1. Baked-Enamel or Powder-Coated Finish: Color as selected by Architect from manufacturer's full range.
 - 2. Interior Curtain-Slat Facing: Match finish of exterior curtain-slat face.

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. 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.
- B. Install overhead coiling doors, hoods, and operators at the mounting locations indicated for each door.
- C. Accessibility: Install overhead coiling doors, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility.
- D. Fire-Rated Doors: Install according to NFPA 80.
- E. 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 08331