



## SECTION 08 33 00

### Overhead Coiling Doors

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#### GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### 1.2 SECTION INCLUDES

- A. Fire Rated Non-Insulated Overhead Coiling Service Doors
- B. Fire Rated Insulated Overhead Coiling Service Doors

##### 1.3 RELATED SECTIONS

- A. Section 05 10 00 - Structural Metal Framing.
- B. Section 06 10 00 - Rough Carpentry.
- C. Section 09 90 00 - Painting and Coating.
- D. Section 26 05 00 - Common Work Results for Electrical.

##### 1.4 REFERENCES

- A. ASTM A480/A480M-04; 2004 - Standard Specification for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.
- B. ASTM A653/A653M-03; 2003 - Standard Specification for Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- C. ASTM A666-00; 2000 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
- D. ASTM B209-04; 2004 - Standard Specification for Aluminum - Alloy Sheet and Plate.
- E. ASTM B221-02; 2002 - Standard Specification for Aluminum - Alloy Extruded Bars, Rods, Wires, Shapes and Tubes.
- F. National Fire Protection Association NFPA 80, 2013 Edition - Standard for Fire Doors and Fire Windows.
- G. Underwriters Laboratories (UL) 10B, 1997 Edition - Standard for Fire Tests of Door Assemblies.

##### 1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: For each type and size of overhead coiling door and accessory.
  - 1. Include construction details, material descriptions, dimensions of individual components, profiles for slats, and finishes.
  - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished accessories.
  - 3. Include description of automatic closing device and testing and resetting instructions.

- C. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.
  - 1. Include plans, elevations, sections, and mounting details
  - 2. Include details of equipment assemblies and indicate dimensions, required clearances, and components.
  - 3. Provide BIM models upon request.
  - 4. Show controls, locking devices, [detectors] [fusible links], and other accessories.
- D. Samples for Initial Selection: Upon request, provide manufacturer's finish charts showing full range of colors and textures available for units with factory applied finishes.
  - 1. Include similar samples of accessories involving color selection
- E. Samples for Verification: Upon request, provide for each type of exposed finish on the following components in manufacturer's standard sizes.
  - 1. Curtain slats.
  - 2. Bottom bar.
- I. Sustainable Design Submittals:
  - 1. Recycled products: Indicate percentage of recycled material used in the manufacturing of products and percentage classified as post-consumer.
  - 2. Regional products: Indicate location of product manufacturer and distance from manufacturing facility to project site.
- J. Closeout Submittals:
  - 1. Operation and maintenance data.

## 1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
  - 1. Company specializing in the manufacturing of products specified in this section and with a minimum of five years experience.
- B. Installer Qualifications: Installer shall be authorized and qualified to install overhead door systems on the type and scope of project specified.
  - 1. Maintenance Proximity: Not more than [insert number] hours normal travel time from installers place of business to project site.
- C. Fire Rated Door Assemblies: Assemblies complying with NFPA 80 that are tested and labeled by a qualifying testing agency for fire protection ratings indicated and based on testing at as close to neutral pressure as possible according to UL 10B.
  - 1. Smoke Control: [Where indicated] [In corridors and smoke barriers], 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. (0.01524 cu. m/s x sq. m) of door opening at 0.10-inch wg (24.9 Pa) for both ambient and elevated temperature tests.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of all materials in accordance with federal, state and local laws.

## 1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

## 1.9 COORDINATION

- A. Coordinate with other operations and installation of adjacent materials to avoid damage to

installed materials.

#### 1.10 WARRANTY

- A. Warranty: Manufacturer's warranty that all parts and components are to be free from defects in materials and workmanship for 1 year.
- B. Warranty: Manufacturer's warranty that all parts and components, except counterbalance spring and finish, are to be free from defects in materials and workmanship for 5 years. Counterbalance springs to be warrantied for 1 year.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: C.H.I. Overhead Doors, which is located at: 1485 Sunrise Dr. ; Arthur, IL 61911; Toll Free Tel: 800-590-0559; Fax: 217-543-4454; Email: [AIA@chiohd.com](mailto:AIA@chiohd.com); Web: [www.chiohd.com](http://www.chiohd.com).
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

#### 2.2 PERFORMANCE REQUIREMENTS

- A. Fire Rated Non-Insulated Overhead Coiling Service Doors
  - 1. Fire Door Construction: Conform to UL 10B.
  - 2. Installed Fire Door Assembly: Conform to NFPA 80.
  - 3. Seismic Performance: Overhead coiling doors shall be evaluated for seismic performance to withstand the effect of earthquake motions determined according to ASCE/SEI 7.
  - 4. Operation: Design complete door assembly including operator for use of not less than 20,000 cycles
- B. Source Limitations: Provide overhead coiling doors from one manufacturer for each type of door. Provide operators and other accessories from source acceptable to overhead coiling door manufacturer.

#### 2.3 MATERIALS

- A. Galvanized Steel Sheet:
  - 1. Galvanized commercial steel, (CS type) per ASTM A653/A653M, G90 and G60 coating class.
- B. LEED Requirements:
  - 1. Recycled content: Minimum [\_\_\_\_] percent with minimum [\_\_\_\_] percent classified as post-consumer.

#### 2.4 DOOR ASSEMBLY

- A. Fire Rated Non-Insulated Overhead Coiling Service Doors
  - 1. Basis of Design: C.H.I. Overhead Doors model 7400
  - 2. Fire Rating Classification:
    - a. 4 hour rating, listed by Underwriters Laboratories (U.L.).
    - b. 3 hour rating, listed by Underwriters Laboratories (U.L.).
    - c. 1-1/2 hour rating, listed by Underwriters Laboratories (U.L.).
    - d. 3/4 hour rating, listed by Underwriters Laboratories (U.L.).
  - 3. Construction:
    - a. Curtain: Constructed from interlocking slats formed from the following.
      - 1) Material:

- a) Galvanized steel per design requirements.
  - b) [18] [20] [22] gauge galvanized steel.
    - i) Finish: Hot-dipped galvanized in accordance with ASTM A653 and with baked on enamel primer coat and polyester finish coat.
      - a. Polyester Finish: [Gray], [White], [Tan] [Brown] [Galvanized]
      - b. Powder Coat: [RAL# ] [Custom Color Match]
- 2) Profile:
- a) Curved, non-insulated, 2 5/8 inches high by 7/8 inch deep.
- 3) End locks: Galvanized malleable iron, attached to every other slat to act as wearing surface and prevent lateral movement.
- 4) Wind locks: Per design requirements.
- 5) Bottom bar:
- a) Two steel angles bolted back-to-back, with adjustable tubular compression weather seal.
    - i) Bottom Bar Finish:
      - a. Painted Black
      - b. Hot Dipped Galvanized
      - c. Cold Galvanizing
      - d. Powder Coat [RAL# ] [to match curtain]
  - b) Two stainless steel angles bolted back-to-back, with adjustable tubular compression weather seal.
    - i) Bottom Bar Finish:
      - a. Mill Finish.
- 6) Vision Lites: Provide rectangular lites, approximately 5 inches wide by 1-1/8 inch high, spaced 7 inches on center, and with fire rated glazing.
- a) Pattern: [As shown on drawings] [[ ] lites wide by [ ] lites high] at [ ] feet above finished floor.
- b. Guides: Structural steel angles bolted together to form guide and mounting surface.
- 1) Guide Material:
- a) Steel
    - i) Guide Finish:
      - a. Painted Black
      - b. Hot Dipped Galvanized
      - c. Cold Galvanizing
      - d. Powder Coat [RAL# ] [to match curtain]
  - b) Stainless Steel
    - i) Guide Finish: Mill finish
- c. Head Plate: Rectangular steel plate, with precision sealed ball bearings supporting drive side axle.
- d. Barrel Assembly: Steel pipe sized for maximum deflection under full load not to exceed 0.03" per foot of span with threaded rings or lugs welded to barrel assembly for curtain attachment.
- e. Springs: Spring tension assembly supported within barrel by precision ball bearings. Curtain weight counterbalanced by oil tempered, helically wound torsion springs; grease packed and mounted on steel torsion shafts with cast

- spring plug.
- 1) Designed for minimum 20,000 cycles.
- 2) Hood Material:
  - a) Minimum 24 gauge galvanized steel
    - i) Hood finish:
      - a. Match curtain finish
      - b. Polyester Finish: [Gray], [White], [Tan], [Brown], [Galvanized]
      - c. Powder Coat: [RAL# ] [to match curtain]
  - b) Minimum 24 gauge stainless steel
    - i) Hood finish:
      - a. #4 polished stainless steel
- f. Smoke Seals: Equip each fire rated door with replaceable smoke seal perimeter gaskets or brushes for smoke and draft control as required for door listing and labeling by a qualified testing agency.
  - 1) Smoke Label: Provide doors with U.L. "S" label in addition to the fire door label to certify smoke control listing.
- g. Weather Seal:
  - 1) Tubular vinyl bottom seal
  - 2) Guide brush seal.
  - 3) Header brush seal.
- h. Locking Mechanism:
  - 1) Two plated steel slide bolt locks with padlock provisions.
  - 2) Chain keeper suitable for padlocking.
  - 3) Cylinder lock mounted to double angle bottom bar.
    - a) Keyed on exterior of door with thumb turn on interior.
    - b) Keyed on both sides of the door.
  - 4) Interlock Switches: Equip power-operated doors with safety interlock switch to disengage power supply when door is locked.
- 4. Mounting:
  - a. Face of wall and above lintel.
  - b. Face of wall and under lintel.
  - c. Between jamb and above lintel.
  - d. Between jamb and under lintel.
- 5. Jamb Construction:
  - a. Solid Masonry
    - 1) Provide anchor bolt fasteners complying with fire door listing.
  - b. Hollow Masonry
    - 1) Provide through bolt fasteners and crush plates complying with fire door listing.
  - c. Stacked Brick
    - 1) Provide through bolt fasteners and crush plates complying with fire door listing.
  - d. Steel Jambs
    - 1) Provide self tapping fasteners complying with fire door listing.
  - e. Steel Frame Covered With Gypsum
    - 1) Provide self tapping fasteners complying with fire door listing.
  - f. Wood Jambs

- 1) Provide wood lag bolts complying with fire door listing.
6. Automatic Closing Device: Equip each fire rated door with an automatic closing device or release holder mechanism and governor unit complying with NFPA 80. Automatic closing device shall be designed for activation by the following:
  - a. Fusible links with melting point of [165] degrees Fahrenheit, interconnected and mounted on both sides of door opening.
  - b. Manufacturer's standard UL labeled [ionization] [photo electric] smoke detectors on both sides of the wall and door holder release device.
  - c. Manufacturer's standard UL labeled heat rise detectors on both sides of the wall and door holder release device.
  - d. Connected to building fire detection, smoke detection, and alarm systems through manufacturer's UL labeled release device.
    - 1) Release Holder: Provide fail safe release holder as an interface between the detection device specified and fire rated door.
      - a) Provide adjustable time delay for up to 10 seconds.
      - b) Provide battery back-up system.
      - c) Provide speaker and verbal warning when activated.
      - d) Provide warning strobe light when activated.
      - e) Provide warning horn when activated.

## 7. Manual Operation

- a. Manual push up operated, utilizing partial spring tension release to initiate closure on alarm.
  - 1) Governor: If required by the size of manual push up door, provide a governing device to maintain the closing speed in a range from 6 inches to 24 inches per second per NPFA 80 requirements.
- b. Chain hoist operated, utilizing enclosed gear reduction operating system and maintaining spring tension when activated by release of a fusible link or release holder.
  - 1) Provide simple test design featuring a drop test handle that allows for drop testing and resetting from the floor.
  - 2) Governor: If required by the size of manual chain hoist operated door, provide a governing device to maintain the closing speed in a range from 6 inches to 24 inches per second per NPFA 80 requirements.
8. Electric Motor Operator: Provide fail safe operator unit that is listed and approved for use on door. Operator to be of size and capacity recommended and provided by door manufacturer for door, maintains spring tension when activated by alarm, and be easily reset from the floor without requiring tools.
  - a. Usage Classification: Electric operator and components capable of operating for not less than number of cycles indicated for each door.
  - b. Operator Location:
    - 1) Mounted on front of hood.
    - 2) Wall mounted.
  - c. Power Supply:
    - 1) 115 VAC, single phase
    - 2) 230 VAC, single phase
    - 3) 208/230 VAC, three phase
    - 4) 460 VAC, three phase
    - 5) 575 VAC, three phase
  - d. Control Station:

- 1) 24 V three button control station with open, close, and stop buttons
- 2) 24 V three button control station with open, close, and stop buttons and keyed lockout.
- 3) 24 V key control station with open and close contacts.
- 4) 24 V key control station with open/close contacts and stop button.
  - a) NEMA 1 Surface mounted for interior.
  - b) NEMA 1 Flush mounted for interior.
  - c) NEMA 4 Surface mounted for exterior.
  - d) NEMA 4 Flush mounted for exterior.
- e. Remote Controls:
  - 1) Provide radio receiver and [single] [three] button remote control(s).
    - a) Provide [.....] transmitters.
    - b) Program remote controls to Open/ Close/ Stop the door.

### Special Controls:

- 1) Keypad Entry System.
  - a) Mounting post.
- 2) Card Reader System.
  - a) Mounting post.
- 3) Internet Connectivity
- 4) Door Timer.
- 5) Loop Detector.
- 6) Pull Cord.
- 7) Vehicle Detector.
- g. Primary Entrapment Protection Devices
  - 1) NEMA 1 Monitored Photo Sensors: Photo eyes fully monitored, non-contact, infrared beam photo sensor system shall reverse a closing door to the full open position when an obstruction is sensed; photo sensors shall be mounted no higher than 6 inches (152 mm) maximum above the floor.
  - 2) NEMA 4 Monitored Photo Sensors: Photo eyes fully monitored, non-contact, photo beam reversing photo sensor system with NEMA 4 watertight enclosure shall reverse a closing door to the full open position when an obstruction is sensed; photo sensors shall be mounted no higher than 6 inches (152 mm) maximum above the floor.
  - 3) Monitored Electric Sensing Edge: Electric sensing edge fully monitored and connected to the operator shall reverse a closing door to the full open position when an obstruction is sensed.
- h. Ancillary Entrapment Protection Devices:
  - 1) Non-Monitored Electric Sensing Edge: Non-monitored electric sensing edge shall reverse a closing door to the full open position when an obstruction is sensed.
  - 2) Pneumatic Sensing Edge: Pneumatic sensing edge shall reverse a closing door to the full open position when an obstruction is sensed.

## PART 2 EXECUTION

### 2.1 EXAMINATION

- A. Examine substrates, areas, and conditions for compliance with requirements for substrate construction and other conditions affecting performance of the work.

- B. Examine locations of electrical connections.
- C. Proceed with installation only after all unsatisfactory conditions have been corrected.

## 2.2 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Anchor to adjacent construction without distortion or stress.
- C. Fit and align door and shutter assembly including hardware, plumb, level and square to ensure smooth operation.
- D. Complete wiring from operator to controls and components.
- E. Coordinate installation of electrical service from power supply to operator.
- F. Complete wiring from operator to controls and components.
- G. Coordinate installation of electrical service from power supply to operator.

## 2.3 ADJUSTING

- A. Adjust hardware and moving parts so that doors operate smoothly throughout full operating range.
- B. Adjust seals to provide a tight fit around the entire perimeter.

## 2.4 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Beginning at Substantial Completion, maintenance service shall include [three] [six] [nine] [twelve] months full maintenance by skilled employees of installing company. Include [monthly] [quarterly] preventive maintenance, repair or replace of worn or defective components, lubrication, cleaning, and adjusting as required for door operation. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.
  - 1. Perform maintenance, including emergency callback service, during normal working hours.
  - 2. Include 24 hour per day, seven days per week, emergency callback service.

## 3.5 DEMONSTRATION

- A. Demonstrate proper operation to Owner.
- B. Perform fire door and shutter drop tests in presence of Owner or owner's representative. Require signature for manufacturer supplied drop test form.

END OF SECTION