



## 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. 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.

##### 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. Sound-Control Doors: Assemblies tested in a laboratory for sound-transmission-loss performance according to ASTM E 90, calculated according to ASTM E 413, and rated for not less than the STC value of 25.

## 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. Insulated Overhead Coiling Service Doors
  - 1. Wind Loads: Design door assembly to withstand a minimum of 20 psf in accordance with ASTM E330 using a 1.0 factor of safety.
  - 2. Seismic Performance: Overhead coiling doors shall be evaluated for seismic performance to withstand the effect of earthquake motions determined according to ASCE/SEI 7.
  - 3. Operation: Design complete door assembly including operator for use of not less than [20,000] [50,000] [100,000] 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. Insulated Overhead Coiling Service Doors
  - 1. Basis of Design: C.H.I. Overhead Doors model 6222.
  - 2. Construction:
    - a. Curtain: Constructed from interlocking slats formed from the following.
      - 1) Front Slat Material:
        - a) 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) Back Slat Material:
        - a) 24 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]
      - 3) Insulation:
        - a) Fill slats with CFC free foamed-in-place polyurethane insulation board complying with maximum flame spread and smoke developed indexes of 75 and 450 respectively, according to ASTM E84 or UL 723.
      - 4) Profile:
        - a) Flat, insulated, 2-3/4 inches high by 5/8 inch deep.

- 5) End locks: Galvanized malleable iron, attached to every other slat to act as wearing surface and prevent lateral movement.
- 6) Wind locks: Per design and wind load requirements
- 7) 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) Extruded aluminum tube type bottom bar.
      - i) Bottom Bar Finish
        - a. Clear Anodized Aluminum
        - b. Powder Coat [RAL# ] [to match curtain]
  - 8) Vision Lites: Provide rectangular lites, approximately 5 inches wide by 1-1/8 inch high, spaced 7 inches on center, and with clear acrylic glazing.
    - a) Pattern: [As shown on drawings] [[ ] lites wide by [ ] lites high] at [ ] feet above finished floor.
- b. Guides: Structural 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]
  - 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) Designed for minimum 50,000 cycles.
    - 3) Designed for minimum 100,000 cycles.
  - f. Hood: Shaped to fit within the head plates and with intermediate supports as required.
    - 1) Hood Material:
      - a) Minimum 24 gauge galvanized steel
    - 2) Hood Color:
      - a) Match curtain finish
      - b) Polyester Finish: [Gray], [White], [Tan], [Brown], [Galvanized]
      - c) Powder Coat: [RAL# ] [to match curtain]
  - g. Weather Seal:

- 1) Tubular vinyl bottom seal
  - 2) Vinyl guide seal with rubber hood baffle.
  - 3) Guide brush seal.
  - 4) 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) Extruded aluminum tube type bottom bar with cylinder locking.
    - a) Keyed on exterior of door with handle throw on interior.
    - b) Keyed on both sides of the door.
  - 5) Interlock Switches: Equip power-operated doors with safety interlock switch to disengage power supply when door is locked.
3. 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.
4. Manual Operation
- a. Chain Hoist.
5. Electric Motor Operator: Provide operator unit, UL listed and UL labeled, size as recommended by manufacturer, capable of driving door at a speed of no less than 8 inches per second nor more than 12 inches per second.
- a. Usage Classification
    - 1) Heavy duty; 25 or more cycles per hour and over 90 cycles per day.
    - 2) Standard duty; up to 25 cycles per hour and up to 90 cycles per day.
    - 3) Medium duty; up to 12 cycles per hour and up to 50 cycles per day.
    - 4) Light duty; up to 10 cycles per hour.
  - b. Operator Location:
    - 1) Mounted on front of hood.
    - 2) Wall mounted.
    - 3) Mounted on opposite side of the wall with connection through wall.
    - 4) As shown on drawings.
  - c. Operator Exposure:
    - 1) Interior.
    - 2) Exterior; wet and humid.
      - a) Provide operator cover to protect operator from weather.
        - i) Operator cover finish to match hood.
        - ii) Operator cover to be galvanized finish.
  - d. 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

- e. 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.
- f. 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.
- h. 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.
- i. 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.
- 6. Wind load: Design door assembly to withstand a minimum of 20 psf in accordance with ASTM E330 using a 1.0 factor of safety.

## 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