

## SECTION 08331

### OVERHEAD COILING DOORS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. General: Provide overhead coiling metal doors as indicated on the Drawings and specified in this Section. Provide complete operating door assemblies including door curtains, guides, hardware, operators, and installation accessories.
  - 1. Include structural steel jamb members, selected by door manufacturer to resist wind loads and support weight of door curtain and operating mechanism.
- B. Related Sections:
  - 1. Section 05400 - Cold Formed Metal Framing
  - 2. Section 05500 - Metal Fabrications: Additional steel jamb and head support framing for overhead coiling doors as required for a complete and weathertight job.
  - 3. Section 07920 - Joint Sealants: Perimeter sealant at exterior overhead coiling doors.
  - 4. Section 07410 - Prefinished Insulated Metal Panel System
  - 5. Section 07412 - Metal Wall Panels
  - 6. Section 07415 - Composite Metal Panel System
  - 7. Section 09800 - High Performance Coatings: Painting of Curtain and exposed all exposed steel.
  - 8. Division 16: Electrical connections for powered operators and accessories are specified in Division 16.

##### 1.2 REFERENCE STANDARDS

- A. Industry Standards:
  - 1. ASTM A446 - Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
  - 2. ASTM A525 - General Requirements for Steel Sheet, Zinc-coated (Galvanized) by the Hot-Dip Process.
  - 3. NFPA 80 - Fire Doors and Windows.
  - 4. UL - Underwriters' Laboratories, Inc.

##### 1.3 PERFORMANCE REQUIREMENTS

- A. **Structural Performance:** Overhead coiling doors shall be designed to comply with the requirements of all governing building codes, including all connections of overhead coiling doors and framing members and the connections of overhead coiling doors and framing members to supporting members and structural elements. Erect overhead coiling doors and framing to withstand the following design loads under conditions involved.
  - 1. Design Loads: Positive and negative wind loads determined in accordance with the International Building Code, 2003 Edition, and the referenced standard ASCE 7-02 for the parameters specified and the following criteria:
    - a. Basic wind gust -  $V = 130$  mph.

- b. Importance factor - = Category 2.
- c. Exposure - B.
- 2. Install overhead coiling doors and framing systems to provide for movement of overhead coiling doors and framing members without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change (range) of 120 deg. F.
- 3. Install overhead coiling doors and framing system to accommodate deflection of primary building structure and construction tolerances, and to maintain clearances at openings.

#### 1.4 SUBMITTALS

- A. **Manufacturer's Product Data:** Submit product data indicating manufacturer's model number and all technical information which specifies full compliance with requirements of this Section, including installation instructions.
- B. **Shop Drawings:** Clearly indicate the following:
  - 1. Design and installation details to withstand required wind load.
  - 2. All details required for complete operation and water/weathertight installations.
  - 3. Conditions for anchorage and support
  - 4. Hardware locations.
  - 5. Type of metal and finish for curtain.
  - 6. Finish for miscellaneous components and accessories.
- C. **Operating Instructions:** Incorporate operating instructions and maintenance information in maintenance manuals specified in "Section 01770 - Closeout Procedures".

#### 1.5 QUALITY ASSURANCE

- A. **Regulatory Requirements:** Comply with applicable requirements of the laws, codes, ordinances and regulations of federal, state and municipal authorities having jurisdiction.
- B. **Manufacturer Requirements:** Door manufacturer shall have been in the business of and have experience in manufacturing the type of product covered under this specification section as well as giving credible service for a minimum of five (5) years. Provide list of at least ten (10) completed projects which include the products covered under this section.
- C. **Installer:** Installation of overhead coiling doors shall be performed by an authorized representative of the manufacturer.
- D. **Single-Source Responsibility:** Provide doors, guides, and related primary components from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.
- E. **Pre-Installation Conference:** Schedule and convene a pre-installation conference just prior to commencement of field operations, to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. **Delivery:** Products shall be delivered to jobsite in original unopened packages bearing manufacturer's labels.
- B. **Store and handle** in accordance with manufacturer's recommendations.
- C. **Protect** from damage from weather, excessive temperature and construction operations.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURER/PRODUCT

- A. **Approved Manufacturers:** Products of the following manufacturers are subject to compliance with the requirements of this Section.
  - 1. McKeon Door Company, Brooklyn, NY.
  - 2. Overhead Door Company
  - 3. Approved equal
- B. **Product:**
  - 1. **Basis of Design:** Coiling hurricane service doors, model H3000-M-G as manufactured by McKeon Door Company.

### 2.2 DOOR MATERIALS AND CONSTRUCTION

- A. **Curtain:** Shall be assembled of interlocking galvanized steel slats, cold rolled. Slats shall have continuous windlocks locking each end all slats to act as a wearing surface, maintain slat alignment and to retain the curtain in the guides under heavy windload. Curtain slats shall be 14 gauge minimum.
  - 1. **Slats:** Shall be of a cross section not less than 6" wide by 1-3/8" deep. Slat galvanizing shall be of a hot process with a high grade zinc coating (minimum 1.25 oz. per square-foot).
- B. **Bottom Bar:** Shall consist of two (2) angles, each not less than 2½" x 2½" x 3/16" steel formed to fit slats.
- C. **Guides:** Each guide assembly shall be fabricated of a minimum 4" x 4" support angle or tube, a 3" x 4" inner guide angle and a 4" x 4" outer guide angle. Guides shall be provided with continuous brass windbars in order to engage curtain windlocks under heavy windload.
- D. **Mounting Brackets:** Fabricated of hot rolled 3/8" steel plate minimum, brackets shall be provided to house ends of the counterbalance barrel assembly.
- E. **Hood:** Shall be provided to entirely enclose curtain and counterbalance barrel assembly. Hood shall be fabricated of 22 gauge galvanized steel and designed to match brackets. Tops and bottoms shall be bent and reinforced for stiffness. Provide intermediate support brackets at all seams to prevent sagging.
- F. **Counterbalance Assembly:** Door shall be counterbalanced by means of adjustable steel helical torsion springs attached to shaft enclosed in pipe with required mounting blocks or rings for attachment of curtain. Grease sealed bearings or self-lubricating graphite bearings shall be attached to the spring barrel which shall be fabricated of hot formed structural quality carbon steel seamless pipe.

- G. **Electric Motor Operator:** Door shall be provided with a compact power unit model "SGH" 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 helical gearing running in an oil bath, shall be furnished together with a spring-set solenoid operated brake, completely housed to protect against damage, dust and moisture. Operator is to be NEMA type 1 enclosure. 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.
  - 1. **Motor:** Shall be totally, intermediate duty, thermally protected, ball bearing type with a class A or better insulation. Single phase motors shall be capacitor start, polyphase shall be squirrel cage induction. Horsepower of motor is to be ½ hp 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:** Helical gear type, 80% efficiency minimum.
  - 4. **Brake:** Double shoe type, continuous duty, solenoid activated, integral within the operator's housing.
  - 5. **Control Station:** Provide flush mount key switch control station marked open, close and stop.
- H. **Safety Edge:** Door shall be designed with an obstruction sensing safety edge. In the event that the safety edge meets an obstruction during the closing operation, the door shall stop, reverse and return to the open position.

### **PART 3 - EXECUTION**

#### **3.1 PREPARATION**

- A. **Field Conditions:** Take field dimensions and examine conditions of substrates, supports, and other conditions under which this work is to be performed. Do not proceed with work until satisfactory conditions are corrected.

#### **3.2 INSTALLATION**

- A. **General:** Install door and operating equipment complete with necessary hardware, jamb and head mold strips, anchors, inserts, hangers, and equipment supports according to final shop drawings, manufacturer's instructions, and as specified.
- B. **Insert and Anchorages:** Furnish inserts and anchoring devices that must be set in concrete or built into masonry to install units. Provide setting drawings, templates, instructions, and directions to install anchorage devices. Coordinate delivery with other work to avoid delay.
- C. **Fit, align and adjust** coiling door assemblies level and plumb for smooth operation.
- D. **Weathertightness:** The completed door assembly shall be water and weather-tight.
- E. Install wiring in accordance with applicable local codes and the National Electrical Code Standard. Materials shall be UL listed.

### 3.3 ADJUSTING AND CLEANING

- A. **Testing and Adjusting:** After completing installation, including work by other trades, lubricate, test, and adjust doors to operate easily, free from excessive noise, warp, twist, or distortion.
  - 1. Repair acceptably or remove and replace with new items door assembly components which are damaged and defective.
  - 2. Clean and repair, or remove and replace with new materials, other items which are soiled, marred, and damaged as a result of door work. Touch-up damaged coating and finishes and repair minor damage.

### 3.4 DEMONSTRATION

- A. **Operating and Maintenance Instruction:** Instruct Owner's personnel on procedures and schedules related to door operation, such as resetting closing devices after activation, servicing and preventive maintenance.

END OF SECTION