



SECTION 08 33 23

OVERHEAD COILING DOORS

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Coiling fire doors.

1.2 RELATED SECTIONS

- A. Section 05 50 00 - Metal Fabrications.
- B. Section 08 71 53 - Security Door Hardware.
- C. Section 09 90 00 - Painting and Coating.
- D. Section 11 12 00 - Parking Control Equipment.
- E. Section 26 05 00 - Common Work Results for Electrical.

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM) A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- B. American Society for Testing and Materials (ASTM) A 240 Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, Strips.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings:
 - 1. Provide drawings indicating guide details, head and jamb conditions, spring shafts, anchorage, accessories, finish colors, patterns and textures, operator mounts and other related information.
 - 2. Regulatory Requirements and Approvals: Provide shop drawings in compliance with local Authority Having Jurisdiction (AHJ).
- D. Certifications:
 - 1. Submit manufacturer's certificate that products meet or exceed specified

- requirements.
- 2. Submit installer qualifications.

- E. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- F. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity, and trained and authorized by the door dealer to perform the work of this section.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 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.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Raynor, which is located at: 1101 East River Rd. P. O. Box 448 ; Dixon, IL 61021-0448; Toll Free Tel: 800-4-RAYNOR; Tel: 815-288-1431; Fax: 888-598-4790; Email: [request info](#); Web: www.raynor.com
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.

2.2 OVERHEAD COILING DOORS

- A. FireCoil as manufactured by Raynor Garage Doors:
 - 1. Doors:
 - a. Operation:
 - 1) Provide doors designed for push-up operation.
 - 2) Provide doors designed for hand chain operation.
 - 3) Provide doors designed for hand crank operation.
 - 4) Provide doors designed for electric motor operation.
 - b. Drive Orientation: Orient the drive from the following side when facing the side of the door that has the counterbalance or hood exposed:
 - 1) Left-hand.
 - 2) Right-hand.
 - c. Mounting: Door guide mounting configuration.
 - 1) To face of wall on each side of door opening.
 - 2) Between jamb of wall opening.

- d. Jamb Construction:
 - 1) Steel jambs with self-tapping fasteners.
 - 2) Masonry jambs with anchor bolt fasteners.
 - e. Fire Resistance Rating:
 - 1) 3-hour rating, listed by Factory Mutual (FM).
 - 2) 1 1/2-hour rating, listed by Factory Mutual (FM).
 - 3) 3/4-hour rating, listed by Factory Mutual (FM).
 - 4) 4-hour rating, listed by Underwriters Laboratories (UL).
 - 5) 1 1/2-hour rating, listed by Underwriters Laboratories (UL).
 - 6) 3/4-hour rating, listed by Underwriters Laboratories (UL).
 - 7) 4-hour rating, approved by California State Fire Marshal (CSFM).
 - 8) 1 1/2-hour rating, approved by California State Fire Marshal (CSFM).
 - 9) 3/4-hour rating, approved by California State Fire Marshal (CSFM).
 - 10) 4-hour rating, approved by City of New York Material and Equipment Acceptance (MEA).
 - 11) 1 1/2-hour rating, approved by City of New York Material and Equipment Acceptance (MEA).
 - 12) 3/4-hour rating, approved by City of New York Material and Equipment Acceptance (MEA).
 - 13) 4-hour rating, listed by International Standards Organization (ISO 3008).
 - 14) 4-hour rating, listed by British Standards (BS476).
2. Curtain: Interlocking roll-formed slats as specified below. Endlocks shall be attached to each of alternate slat to prevent lateral movement.
- a. Slat Type(s):
 - 1) Flat slat 18 gauge steel (0.047 inch minimum thickness).
 - 2) Flat slat 20 gauge steel (0.036 inch minimum thickness).
 - 3) Flat slat 22 gauge steel (0.030 inch minimum thickness).
 - 4) Flat slat 20 gauge stainless steel (0.033 inch minimum thickness).
 - 5) Flat slat 22 gauge stainless steel (0.027 inch minimum thickness).
 - 6) Large curved slat 18 gauge steel (0.047 inch minimum thickness).
 - 7) Large curved slat 20 gauge steel (0.036 inch minimum thickness).
 - 8) Large curved slat 22 gauge steel (0.030 inch minimum thickness).
 - 9) Small curved slat 20 gauge steel (0.036 inch minimum thickness).
 - 10) Small curved slat 22 gauge steel (0.030 inch minimum thickness).
 - 11) Insulated flat slat 24 gauge steel (0.023 inch minimum thickness) with 24 gauge steel back covers (0.023 inch minimum thickness).
 - 12) Insulated flat slat 22 gauge steel (0.030 inch minimum thickness) with 24 gauge steel back covers (0.023 inch minimum thickness).
 - 13) Insulated flat slat 20 gauge steel (0.036 inch minimum thickness) with 24 gauge steel back covers (0.023 inch minimum thickness).
 - 14) Insulated flat slat 18 gauge steel (0.047 inch minimum thickness) with 24 gauge steel back covers (0.023 inch minimum thickness).

- a) Insulation: Mineral wool with R-value 4.0 and U-value 0.250.
- b. Material:
 - 1) Commercial quality hot-dipped galvanized (G-90) steel in accordance with ASTM A-653.
 - 2) Stainless steel in accordance with ASTM A-240, type 304.
- c. Color and Finish:
 - 1) One finish coat of gray polyester paint applied over one coat of primer.
 - 2) One finish coat of tan polyester paint applied over one coat of primer.
 - 3) One finish coat of white polyester paint applied over one coat of primer.
 - 4) Galvanized finish.
 - 5) Stainless steel #4 finish.
 - 6) ArmorBrite Powdercoat finish.
 - a) Color: _____.
- 3. Endlocks: Zinc-plated malleable cast iron endlocks fastened with two zinc-plated steel rivets.
- 4. Bottom Bar: Two structural angles, minimum 2 inches by 2 inches by 3/16 inch (50.8 mm x 50.8 mm x 4.8 mm).
 - a. Material and finish:
 - 1) Structural steel angle bottom bar to receive one coat of black rust-inhibitive primer.
 - 2) Structural stainless steel angles mill finish.
 - 3) Structural steel angle bottom bar to receive one coat of ArmorBrite Powdercoat finish.
 - a) Color: _____.
- 5. Guide Assemblies: Three structural angles, minimum 3 inches by 2 inches by 3/16 inch (76 mm by 50.8 mm by 4.8 mm) and fitted with removable curtain stops.
 - a. Material and Finish:
 - 1) Structural steel to receive one coat of black rust-inhibitive primer.
 - 2) Structural steel to receive one coat of hot-dipped galvanized.
 - 3) Structural stainless steel with a mill finish.
 - 4) Structural steel to receive ArmorBrite Powdercoat finish.
 - a) Color: _____.
- 6. Guide Smoke Seals: Seals to inhibit smoke infiltration between the guide and the curtain.
 - 1) Brushseal with an aluminum retainer attached to the guide assembly.
- 7. Counterbalance:
 - a. Barrel: Minimum 4-1/2 inches (114.3 mm) O.D. and 0.120 inch (3.1 mm) wall thickness structural steel pipe. Deflection of pipe under full load shall not exceed 0.03 inch (0.8 mm) per foot of span.
 - b. Counterbalance: Provide counterbalance mechanism with helical torsion springs, grease packed and mounted on a continuous steel torsion shaft.
 - 1) Standard 10,000 cycles.
 - 2) High _____ cycles.
- 8. Brackets: 3/16 inch (4.8 mm), minimum, steel plate, attached to wall angle of guide assembly with 1/2 inch (12.7 mm) diameter class 5 case hardened bolts. Inside of drive bracket fitted with sealed ball bearing.
 - a. Finish:
 - 1) Provide brackets with one coat of rust-inhibitive primer.
 - 2) Provide brackets with one coat of hot-dipped galvanized.

- 3) Provide brackets with one coat of ArmorBrite Powdercoat finish.
 - a) Color: _____.
9. Enclosures:
 - a. Hood Type:
 - 1) Round Hood.
 - 2) Square Hood.
 - b. Bracket Covers: Covers to enclose door mechanisms.
 - c. Material:
 - 1) 24 gauge steel (0.022 inch minimum thickness) commercial quality hot-dipped galvanized (G-60) steel in accordance with ASTM A-653.
 - 2) 24 gauge stainless steel (0.023 inch minimum thickness) in accordance with ASTM A-240, type 304.
 - d. Color and Finish:
 - 1) Gray polyester paint to match curtain finish.
 - 2) Tan polyester paint to match curtain finish.
 - 3) White polyester paint to match curtain finish.
 - 4) Galvanized to match curtain finish.
 - 5) Stainless steel #4 finish.
 - 6) ArmorBrite Powdercoat finish.
 - a) Color: _____.
 - e. Flame Baffle: Provide flame baffle to comply with listing agency.
10. Automatic Closing Device: Automatic closing of rolling fire door under a fire condition to be initiated by the following:
 - a. Fusible links.
 - b. Thermal-manual links.
 - c. Electro-thermal manual links with junction box.
 - d. Electro-thermal manual links without junction box.
 - e. Solid State Release Device Units LM21 Model XP.
 - f. Solid State Release Device Units LM21 Model XPBB.
 - g. Solid State Release Device Units LM21 Model AFGB.
11. Detection Type: Device used in conjunction with the automatic closing device type to initiate the automatic closing of a rolling fire door shall be the following:
 - a. Photoelectronic with heat sensor detector.
12. Header Smoke Seal: Provide a "Z" shape brushseal to inhibit smoke infiltration between the header and the curtain.
13. Locks: Furnish door system with the following:
 - a. Locking Bar: For push-up doors and doors operated with hand chain or hand crank, to receive padlock provided by Owner.
 - b. Locking Bar for Motor Operated Doors: Provide interlock switch with locking bar.
 - c. Hand Chain Lock: To receive padlock provided by Owner; for doors operated with hand chain.
 - d. Cylinder Lock: For push-up doors and doors operated with hand chain and hand crank operated doors.
 - e. Cylinder Lock for Motor Operated Doors: Provide interlock switch with cylinder lock.

2.3 ELECTRIC OPERATORS

- A. FireHoist as provided by Raynor Garage Doors:
 1. Model:
 - a. Raynor FSE model:
 - 1) Type: Jackshaft with automatic closure by fusible link, detector or fire alarm system. Allows automatic closing without loss of door spring tension thus allowing for ease of resetting of door after

testing or alarm. Operates as a standard rolling door operator when not in a fire situation.

- 2) Motor Horsepower Rating: Continuous 1/3 HP.
- 3) Motor Horsepower Rating: Continuous 1/2 HP.
- 4) Motor Horsepower Rating: Continuous 3/4 HP.
- 5) Motor Horsepower Rating: Continuous 1-1/2 HP.
- 6) Motor Horsepower Rating: Continuous 2 HP.
- 7) Electrical Requirements: 115 volt single phase.
- 8) Electrical Requirements: 230 volt single phase.
- 9) Electrical Requirements: 208-230 volt three phase.
- 10) Electrical Requirements: 460 volt three phase.
- 11) Duty Cycle: Restricted duty cycles.
- 12) Control Wiring: 24 volt control with provisions for connection of a monitored reversing device.
 - a) Provide three button momentary contact "open-stop", constant pressure close, with provisions for momentary pressure to close.
 - b) Monitored electric reversing edge on door.
 - c) Monitored photo electric eyes mounted on jambs.

b. Raynor FGH model:

- 1) Type: Jackshaft with automatic closure by fusible link. Allows automatic closing without loss of door spring tension thus allowing for "Easy-Reset" of door after testing.
- 2) Motor Horsepower Rating: Continuous 1/2 HP.
- 3) Motor Horsepower Rating: Continuous 1 HP.
- 4) Motor Horsepower Rating: Continuous 1-1/2 HP.
- 5) Motor Horsepower Rating: Continuous 2 HP.
- 6) Motor Horsepower Rating: Continuous 3 HP.
- 7) Electrical Requirements: 115 volt single phase.
- 8) Electrical Requirements: 230 volt single phase.
- 9) Electrical Requirements: 208-230 volt three phase.
- 10) Electrical Requirements: 460 volt three phase.
- 11) Electrical Requirements: 575 volt three phase.
- 12) Duty Cycle: Restricted duty cycles.
- 13) Control Wiring: 24 volt control with provisions for connection of a monitored reversing device.
 - a) Provide three button momentary contact "open-stop", constant pressure close, with provisions for momentary pressure to close.
 - b) Monitored electric reversing edge on door.
 - c) Monitored photo electric eyes mounted on jambs.

c. Raynor FDC model:

- 1) Type: Jackshaft with automatic closure by fusible link, detector or fire alarm system. Allows automatic closing without loss of door spring tension thus allowing for ease of resetting of door after testing or alarm. Operates as a standard rolling door operator when not in a fire situation.
- 2) Motor Horsepower Rating: Continuous 1/2 HP.
- 3) Motor Horsepower Rating: Continuous 1 HP.
- 4) Electrical Requirements: 115 volt single phase.
- 5) Electrical Requirements: 230 volt single phase.
- 6) Electrical Requirements: 208-230 volt three phase.
- 7) Electrical Requirements: 460 volt three phase.
- 8) Duty Cycle: 25 cycles/hour.
- 9) Control Wiring: 24 volt control with provisions for connection of a

monitored reversing device.

- a) Provide three button momentary contact "open-close-stop".
 - b) Monitored electric reversing edge on door.
 - c) Monitored photo electric eyes mounted on jambs.
- d. Raynor FDCL model:
- 1) Type: Jackshaft with automatic closure by fusible link, detector or fire alarm system. Allows automatic closing without loss of door spring tension thus allowing for ease of resetting of door after testing or alarm. Operates as a standard rolling door operator when not in a fire situation.
 - 2) Motor Horsepower Rating: Continuous 1/2 HP.
 - 3) Electrical Requirements: 115 volt single phase.
 - 4) Electrical Requirements: 230 volt single phase.
 - 5) Electrical Requirements: 208-230 volt three phase.
 - 6) Electrical Requirements: 460 volt three phase.
 - 7) Duty Cycle: 25 cycles/hour.
 - 8) Control Wiring: 24 volt control with provisions for connection of a monitored reversing device.
 - a) Provide three button momentary contact "open-close-stop".
 - b) Monitored electric reversing edge on door.
 - c) Monitored photo electric eyes mounted on jambs.

PART 2 EXECUTION

2.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared. Verify that site conditions are acceptable for installation of doors, operators, controls and accessories. Ensure that openings are square, flush and plumb.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

2.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

2.3 INSTALLATION

- A. General: Install door, guides and operating equipment complete with all necessary accessories and hardware according to shop drawings, manufacturer's instructions.
- B. Lubricate bearings and sliding parts and adjust doors for proper operation, balance, clearance and similar requirements.

2.4 PROTECTION

- A. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove and legally dispose of construction debris from project site.
- B. Remove temporary coverings and protection of adjacent work areas. Repair or replace installed products damaged prior to or during installation.

- C. Protect installed products until completion of project.
- D. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION