

## **RAYNOR - DuraCoil**

### **SECTION 08 33 23 - ROLLING SERVICE DOORS**

*"Specifier Notes" may be hidden or shown by using "Tools"/"Options"/"View"/"Hidden Text".*

#### **PART 1 GENERAL**

##### **1.1 SECTION INCLUDES**

- A. Rolling Service doors.
- B. Electric Operators

##### **1.2 RELATED SECTIONS**

- A. Section 05 50 00 - Metal Fabrications.
- B. Section 06 10 00 - Rough Carpentry. Door opening jamb and head members
- C. Section 08 71 53 - Security Door Hardware.
- D. Section 09 90 00 - Painting and Coating.
- E. Section 11 12 00 - Parking Control Equipment.
- F. 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) B 209 Aluminum and Aluminum-Alloy Sheet and Plate.
- C. American Society for Testing and Materials (ASTM) A 240 Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, Strips.
- D. ANSI/DASMA 105 – American National Standard Institute Test Method for Thermal Transmittance and Air Infiltration of Garage Doors
- E. ANSI/DASMA 108 - American National Standards Institute Standard Method For Testing Sectional Garage Doors And Rolling Doors: Determination Of Structural Performance Under Uniform Static Air Pressure Difference.
- F. ANSI/DASMA 203 - American National Standards Institute Specifications for non-rated fire rolling doors published by Door & Access Systems Manufacturers Association International.
- G. ASTM A 123 – Standard Specification for Zinc (hot-dipped galvanized) coatings on iron and steel products.

- H. ASTM A 229 - Steel wire, oil-tempered for mechanical springs.
- I. ASTM E 330 - Structural performance of exterior windows, curtain walls, and doors by uniform static air pressure difference.
- J. ASTM E 413 - Classification for Rating Sound Insulation
- K. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Element.
- L. ASTM A 924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
- M. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- N. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems Current Edition, Including All Revisions.

#### 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, 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 authorized installer of door manufacturer who has demonstrated experience on projects of similar size and complexity.
- B. Manufacturer Qualifications: Company with a minimum of five-year experience in producing the specified type of doors.

## 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.

## 1.8 WARRANTY

- A. Raynor warrants the door and its component parts for one (1) year against defects in material and workmanship.
- B. Raynor warrants the electrical operator and its component parts for two (2) years against defects in material and workmanship.
- C. Raynor warrants the electrical operator and its component parts for three (3) years against defects in material and workmanship, on the operator only, when purchased with any model of Raynor rolling service door.
- D. Raynor warrants ArmorBrite™ powder coat finish against cracking or peeling for three (3) years.

## 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: [architectsupport@raynor.com](mailto:architectsupport@raynor.com); Web: [www.raynor.com](http://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. DuraCoil 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 electric motor operation.
    - b. Mounting: Door guide mounting configuration.
      - 1) Interior face of wall on each side of door opening.
      - 2) Exterior face of wall on each side of door opening.
      - 3) Between jamb of wall opening.
    - c. Structural Performance Requirements:

- 1) Wind Loads: Uniform pressure of: \_\_\_\_\_ psf.
- d. International Energy Conservation Code (IECC) Requirements:
  - 1) Air Infiltration – Maximum air leakage of 1.00 cfm/ft<sup>2</sup> is required. Testing shall be in accordance with DASMA 105 test procedure.
  - 2) Raynor provides an air leakage rating of .47 cfm/ft<sup>2</sup>.
  - 3) Maximum U-Factor of .90 is required and shall be tested to DASMA 105.
- d. Sound Transmission Class (STC) rating
  - 1) STC rating of 22 required on an insulated door.
  - 2) STC rating of 23 required on an insulated door with header seal.
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 slats**
      - a) Steel 18 gauge (0.047 inch minimum thickness).
      - b) Steel 20 gauge (0.036 inch minimum thickness).
      - c) Steel 22 gauge (0.030 inch minimum thickness).
      - d) Steel 24 gauge (0.023 inch minimum thickness).
      - e) Stainless steel 20 gauge (0.036 inch minimum thickness).
      - f) Stainless steel 22 gauge (0.030 inch minimum thickness).
      - g) Aluminum 16 gauge (0.050 inch minimum thickness).
      - h) Aluminum 18 gauge (0.040 inch minimum thickness).
      - i) Light-duty 24 gauge steel (0.023 inch minimum thickness).
    - 2) **Large curved slats**
      - a) Steel 18 gauge (0.047 inch minimum thickness).
      - b) Steel 20 gauge (0.036 inch minimum thickness).
      - c) Steel 22 gauge (0.030 inch minimum thickness).
    - 3) **Small curved slats**
      - a) Steel 20 gauge (0.036 inch minimum thickness).
      - b) Steel 22 gauge (0.030 inch minimum thickness).
    - 4) **Perforated flat slats punched with 1/16 inch (1.6mm) diameter holes staggered on 3/32 inch (2.4mm) centers across entire length.**
      - a) Steel 20 gauge (0.036 inch minimum thickness).
      - b) Steel 22 gauge (0.030 inch minimum thickness).
      - c) Aluminum 16 gauge (0.050 inch minimum thickness).
      - d) Aluminum 18 gauge (0.040 inch minimum thickness).
    - 5) **Insulated flat slats with 24 gauge backer (22 gauge optional)**
      - a) Steel 18 gauge (0.047 inch minimum thickness)
      - b) Steel 20 gauge (0.036 inch minimum thickness)
      - c) Steel 22 gauge (0.030 inch minimum thickness)
      - d) Steel 24 gauge (0.023 inch minimum thickness)
      - e) Stainless Steel 20 gauge (0.036 inch minimum thickness)
      - f) Stainless Steel 22 gauge (0.030 inch minimum thickness)
      - g) Aluminum 16 gauge (0.050 inch minimum thickness)
      - h) Aluminum 18 gauge (0.040 inch minimum thickness)
      - a) Insulation: Polyisocyanurate.
  - 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.
    - 3) Aluminum in accordance with ASTM B-209, alloy 5005, temper H34.
  - 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) Clear anodize finish.
  - 7) Bronze anodize finish.
  - 8) ArmorBrite Powdercoat finish.
    - a) Color: \_\_\_\_\_.
3. Endlocks: Zinc-plated malleable cast iron endlocks fastened with two zinc-plated steel rivets.
4. Bottom Bar: Two angles, minimum 1-1/2 inches by 1-1/2 inches by 1/8 inch (38.1 mm x 38.1 mm x 3.2 mm) with single-contact type bottom astragal.
- a. Material:
    - 1) Roll-formed galvanized steel angles.
    - 2) Structural steel angles.
    - 3) Structural aluminum angles.
    - 4) Break-formed stainless steel angles.
    - 5) Structural stainless steel angles.
  - b. Color and finish:
    - 1) Structural angle bottom bar to receive one coat of black rust-inhibitive primer.
    - 2) Roll-formed steel angles to be galvanize finish.
    - 3) Break-formed stainless steel angles #4 finish.
    - 4) Structural stainless steel angles mill finish.
    - 5) Structural aluminum angles to be clear anodize finish.
    - 6) Structural aluminum angles to be bronze anodize finish.
    - 7) ArmorBrite Powdercoat finish.
      - a) Color: \_\_\_\_\_.
5. Vision Panels: 4 inches by 1 inch (101.6 mm by 25.4 mm):
- a. 1/8 inch (3.2 mm) thick acrylic glass for flat slats
  - b. 5/8 inch (15.9 mm) thick acrylic glass for insulated slats
  - c. Fenestrated (open slots)
6. 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: \_\_\_\_\_.
7. Guide Weatherseal: Seals to inhibit air infiltration between the guide and the curtain.
- 1) Snap-on dual durometer vinyl seal.
  - 2) Brushseal with an aluminum retainer.
  - 3) EDPM rubber with an aluminum retainer
8. 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 15,000 cycles.
    - 2) High \_\_\_\_\_ cycles.

9. 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 Grade 5 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: \_\_\_\_\_.
10. 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 steel in accordance with ASTM A-653.
    - 2) 24 gauge stainless steel (0.024 inch minimum thickness) in accordance with ASTM A-240, type 304.
    - 3) 18 gauge aluminum (0.040 inch minimum thickness) in accordance with ASTM B-209, alloy 5005, temper H34.
  - 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) Clear anodize finish.
    - 7) ArmorBrite Powdercoat finish.
      - a) Color: \_\_\_\_\_.
  - e. Hood Baffle: Provide hood baffle with a rubber seal to inhibit air infiltration through hood cavity.
11. Header Seal: Provide a "Z" shape aluminum retainer with EDPM rubber to inhibit air infiltration between the header and the curtain.
12. Locks: Furnish door system with the following:
  - a. Locking Bar: For push-up doors and doors operated with hand chain 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 use with push-up and hand chain operated doors.
  - e. Cylinder Lock for Motor Operated Doors: Provide interlock switch with cylinder lock.

## 2.3 ELECTRIC OPERATORS

- A. ControlHoist (UL Listed) as manufactured by Raynor Garage Doors:
  1. Model:
    - a. Raynor ControlHoist Optima:
      - 1) Type: Jackshaft with manual chain hoist.
      - 2) Motor Horsepower Rating: Per the manufacturer's recommended size for door.

- 3) Motor Horsepower Rating: Continuous 1/2 HP.
  - 4) Motor Horsepower Rating: Continuous 3/4 HP.
  - 5) Motor Horsepower Rating: Continuous 1 HP.
  - 6) Motor Horsepower Rating: Continuous 1-1/2 HP.
  - 7) Motor Horsepower Rating: Continuous 2 HP.
  - 8) Electrical Requirements: 115 volt single phase.
  - 9) Electrical Requirements: 230 volt single phase.
  - 10) Electrical Requirements: 208-230 volt three phase.
  - 11) Electrical Requirements: 460 volt three phase.
  - 12) Duty Cycle: 30 cycles/hour or 300 cycles/day.
  - 13) Control Wiring: Solid state circuitry with provisions for connection of a monitored reversing device, external radio control hook-up and maximum run timer. Provisions for timers to close and mid stop and lock bar sensor capability.
    - a) Provide three button momentary contact "open-stop", constant pressure on close (can be changed to momentary to close).
    - b) Custom wiring.
    - c) Monitored electric reversing edge on door.
    - d) Monitored photo electric eyes mounted on jambs.
- b. Raynor ControlHoist Standard:
- 1) Type: Jackshaft.
  - 2) Type: Jackshaft with manual chain hoist.
  - 3) Motor Horsepower Rating: Per the manufacturer's recommended size for door.
  - 4) Motor Horsepower Rating: Continuous 1/3 HP.
  - 5) Motor Horsepower Rating: Continuous 1/2 HP.
  - 6) Motor Horsepower Rating: Continuous 3/4 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: 30 cycles/hour or 300 cycles/day.
  - 12) Control Wiring: Solid state circuitry with provisions for connection of a monitored reversing device, external radio control hook-up and maximum run timer. Provisions for timers to close and mid stop and lock bar sensor capability.
    - a) Provide three button momentary contact "open-stop", constant pressure on close (can be changed to momentary to close).
    - b) Custom wiring.
    - c) Monitored electric reversing edge on door.
    - d) Monitored photo electric eyes mounted on jambs.
- c. Raynor ControlHoist Basic:
- 1) Type: Jackshaft.
  - 2) Type: Jackshaft with manual chain hoist.
  - 3) Motor Horsepower Rating: Intermittent 1/2 HP.
  - 4) Electrical Requirements: 115 volt single phase.
  - 5) Duty Cycle: 14 cycles/hour.
  - 6) Control Wiring: Solid state circuitry with provisions for connection of a monitored reversing device, external radio control hook-up and maximum run timer. Provisions for timers to close and mid stop and lock bar sensor capability.
    - a) Provide three button momentary contact "open-stop", constant

- pressure on close (can be changed to momentary to close).
- b) Monitored electric reversing edge on door.
- c) Monitored photo electric eyes mounted on jambs.

## PART 3 EXECUTION

### 3.1 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.

### 3.2 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.

### 3.3 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.

### 3.4 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