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SECTION 08 33 23.13

OVERHEAD RAPID COILING DOORS

# PART 1 – GENERAL

## SUMMARY

* 1. Section includes high-speed, rigid overhead coiling doors, activation devices and accessories.

## ADMINISTRATIVE REQUIREMENTS

* 1. Coordination: Verify the work of this Section with project conditions for compliance with Contract Documents. Coordinate overhead rapid coiling door’s operating controls with activation devices and specified accessories.

## ACTION SUBMITTALS

* 1. See Section 01 30 00 – Administrative Requirements for submittal procedures.
  2. Product Data: For each type and size of overhead rapid coiling door, activation device, and accessory, include detailed information of fabricated materials and finishes, wind load resistance, and electrical component connections.
  3. Shop Drawings: Indicate pertinent dimensioning, component profiles, and anchorage locations for verification of proper fit and mounting. Include Setting Drawings and templates, with locations for built-in or embedded anchoring devices, a summary of forces, loads and weights on walls and jambs and the Manufacturer’s Installation & Maintenance Manual – English.
  4. Samples: Upon request of the Architect or owner’s representative, submit 1 set(s) rigid door panel material for each slat option selected. Sample sizes to be no less than one typical slat profile 6” (153mm) in length.
  5. Sustainable Design Submittals: Upon request, submit product qualification materials from manufacturer in accordance with Green Building Certification Programs required documentation.

## QUALITY ASSURANCE

* 1. Regulatory Agency Approvals: Items requiring electrical connection in this section shall be listed and classified by UL/ULC or testing firm acceptable to Authorities Having Jurisdiction as suitable for purpose specified.
  2. Qualifications:
     1. Suppliers: Obtain overhead rapid coiling doors, including all components and accessories though one source., from a single manufacturer. Use only new doors, components, and accessories for this project.
     2. Installers: Engage companies specializing in performing work of the type specified in this section and with at minimum 3 years documented experience or trained and authorized by manufacturer.

## DELIVERY, STORAGE AND HANDLING

* 1. Delivery and Acceptance Requirements: Verify completeness of shipment upon receipt of materials. Confirm delivery of all component parts with original shipping manifest.
  2. Storage and Handling Requirements: Store all materials in dry locations with adequate ventilation, free from dust, water, and available for inspection and handling.

## WARRANTY

* 1. See Section 01 78 00 – Closeout Submittals for additional warranty requirements.
  2. Warranty Documentation: Provide a final executed warranty document as accepted by Owner; include in Warranties and Bonds Manual.
  3. Warranty Period: Period of warranty begins at date of shipment of the product to the customer. The motor is guaranteed against defects in materials and workmanship for a period of 5 full years (excludes anti-fallback device). All other mechanical and electrical components are warranted against defects for a period of 2 full years. Slats are warranted against defects for a period of 2 years. Products with less than a 5/2-year warranty will not be accepted. During the warranty period, labor is covered for the first year after installation is completed.

# PART 2 – PRODUCTS

1. MANUFACTURERS
   1. Hörmann High Performance Doors.

117 Starpointe Boulevard, Burgettstown, Pennsylvania 15021-9506

Toll Free: (800)-365-3667 | Phone: 724-385-9150

Website: www.hormann.us | Contact Email Address: info2@hormann.us

* 1. Products Options: Provide the following as to be considered the basis of design:
     1. High Performance Door Model: Steel Ranger™ Series – Model 9000 L.
  2. Substitution Limitations:
     1. No substitutions or exceptions shall be approved.

1. PERFORMANCE REQUIREMENTS
   1. Structural Performance Requirements: Provide door assemblies capable of withstanding gravity loads and stresses without permanent deformation of the door components.
      1. Resistance to Wind Load: Uniform pressure (velocity pressure) acting inward (pressure) and outward (suction) of wind acting normal to plane of wall as determined in accordance with ASTM E330-02, FBC-TAS 202-94, or ANSI/DASMA 108-2012, Exposure B:
         1. Door widths up to 15’- 7” (4.75 m): 21 psf. (1006 Pa), Wind Load Class 4, 91 mph (146 km/h)
         2. Door widths up to 18’- 11” (5.75 m): 14.5 psf. (695 Pa), Wind Load Class 3, 75 mph (120 km/h)
         3. Door widths up to 21’- 4” (6.50 m): 9.4 psf. (450 Pa), Wind Load Class 2, 60 mph (96 km/h)
   2. Operation-Speed Requirements: Open cycle no less than 45 in./sec. (1.14 m/s) and close cycle at no more than 30 in./sec. (0.76 m/s).
   3. Operation-Cycle Requirements: Acting for not less than 500,000 total cycles and up-to 685 cycles per day.
   4. Thermal Resistance (R-value) of Door Curtain Material Requirements: No less than R 8.0 (ft2 x ℉ x h)/BTU for solid panels.
   5. Heat Transfer Coefficient (U-value) Requirements: No greater than U 4.1 W/(m2 x K) for complete door assembly.
   6. Acoustic Insulation Requirements: Minimum installed assembly performance value STC 21, Rw 18 dB; per test method ISO 140-3 or ASTM E90.
   7. Visible Transmittance Requirements: Vision panels with a minimum allowance at 0.86 (Tvis) in compliance with ANSI/NFRC 200-2014.
   8. Solar Heat Gain Coefficient (G-value) Requirements: Vision panels at minimum resistance of 0.83. Comply with ANSI/NFRC 200-2014.
2. OPERATION
   1. Electric Door Operator (Drive System): 2 Horsepower variable speed motor capable of gradual acceleration and braking.
   2. Door Control Devices: One (manufacturer supplied) Control Panel per unit, required.

[SELECT FROM THE FOLLOWING CONTROL PANELS, DELETE THOSE NOT REQUIRED]

* + 1. **(Standard Equipment)** Control Panel: Three-Phase Model: Hörmann AK500FUE-1 Smart Start™ NXT with Plug & Play wiring. Housing (W x H x D): 11-⅝” x 5-¾” x 8-⅛” (295 x 400 x 208 mm). NEMA Type 4X / IP66 compliant, UL/cUL listed. Supply Voltage (from Electrical Disconnect): 3-Phase, 208 vAC to 575 vAC, 60 Hz, 20 Amp Class CC fuse. Control Panel Weight: 16 lbs. (7.25 kg).

**[SELECT FROM THE FOLLOWING CONTROL PANEL FINISHES, DELETE THOSE NOT REQUIRED]**

* + - 1. **(Standard Finish)** Finish: Polyester Powder Coat Painted, baked-on steel. Color RAL 7035 Light Grey, all surfaces.
      2. **(Optional Finish)** Finish: 316 Stainless Steel, polished, all surfaces.
    1. **(Optional Equipment)** Control Panel: UL/CUL Single-Phase Model: Hörmann AK500FUE-1 Smart Start™ NXT with Plug & Play wiring. Housing (W x H x D): 11-⅝” x 5-¾” x 8-⅛” (295 x 400 x 208 mm). Polyester powder coat paint, baked-on steel, Color RAL 7035 Light Grey, all surfaces. NEMA Type 4X / IP66 compliant, UL/cUL listed. Supply Voltage (from Electrical Disconnect): 1-Phase, 230 vAC, 60 Hz, 20 Amp Class CC fuse. Control Panel Weight: 16 lbs. (7.25 kg).
    2. **(Optional Equipment)** Control Panel: Heated Three-Phase Model: Hörmann XL49819 Smart Start™ NXT with Plug & Play wiring. Housing (W x H x D): 15-¾” x 23-⅝” x 7-⅞” (400 x 600 x 200 mm). NEMA Type 4X / IP66 compliant, UL/cUL listed. Supply Voltage (from Electrical Disconnect): 3-Phase, 208 vAC to 575 vAC, 60 Hz, 20 Amp Class CC fuse. Control Panel Weight: 16 lbs. (7.25 kg).

**[SELECT FROM THE FOLLOWING OPTIONAL HEATED CONTROL PANEL FINISHES, DELETE THOSE NOT REQUIRED]**

* + - 1. **(Standard Finish)** Finish: Polyester Powder Coat Painted, baked-on steel. Color RAL 7035 Light Grey, all surfaces.
      2. **(Optional Finish)** Finish: 316 Stainless Steel, polished, all surfaces.
  1. Activation Devices: Provide door activations as noted on Door and Hardware Schedules including locations, quantities, and types and in coordination with Section 08 71 13 – Automatic Door Operators.
     1. Manufacturer Recommended Door Activation Device: BEA, Inc.: LZR®-WIDESCAN, Motion, Presence & Safety Sensor. Quantity: Two (2). Mounting Extension Bracket. Quantity: One (1).
     2. **[EDIT TO INCLUDE AS REQUIRED]** **(Optional Equipment)** Other Door Activation Devices:Triple Push Button Control: MMTC, Inc.: 3BXL, NEMA 4 Exterior Three-button with Lockout - Surface Mounted Control Station. Integrated keyed lockout. NEMA Type 4 rated. Triangular button pattern configuration.
  2. Emergency Operation / Disconnect Device: Provide one Electrical Disconnect Device (switch) (not supplied by manufacturer) for each overhead rapid coiling door installed. Emergency manual operation via disconnect of power to the motor and chain hoist. Hand crank operation not accepted.

1. MATERIALS
   1. Top Assembly Components:
      1. Roll Tube: 6-¼ inch (158.75 mm) diameter hollow barrel Roll Tube fabricated of high strength steel with a minimum wall thickness of 0.188-inches (4.8 mm).
      2. Support and Bearing Mechanisms: Roll Tube & Motor Support Bracket (1 Each): Provide one ⅛” (3.175 mm) galvanized steel support bracket per each jamb. Fitted with heavy-duty self-aligning bearings and cast-iron housings. Motor Bracket: One motor mounting bracket at the operator side of the door shall be provided. Bracket Mounting Plates (1 Each Jamb): Provide one, sixteenth inch (1.58 mm) galvanized steel Bearing Mounting Plate per each jamb, for connection between the Guide Tracks and the Top Assembly of the door.
      3. Top Assembly Component Finishes: **[SELECT FROM THE FOLLOWING TOP ASSEMBLY FINISHES, DELETE THOSE NOT REQUIRED]**
         1. **(Standard Finish)** Finish: Galvanized steel, zinc, class G90 (Mounting Brackets, Motor Bracket).
         2. **(Optional Finish)** Finish: Polyester Powder Coat Painted, baked-on steel. Color selected from manufacturer’s standard color range, RAL Classic Color System, (Mounting Brackets, Motor Bracket).
   2. Guide Tracks: Fabricated jamb guides constructed with Manufacturer’s standard heavy-duty materials arranged with a continuous, vertical oriented, one-piece design and removable front covers to meet specified performance criteria; allowing the door curtain to operate smoothly.
      1. Guide Tracks Finish: **[SELECT FROM THE FOLLOWING GUIDE TRACKS FINISHES, DELETE THOSE NOT REQUIRED]**
         1. **(Standard Finish)** Finish: Galvanized steel, zinc, class G90 (Guide Tracks).
         2. **(Optional Finish)** Finish: Polyester Powder Coat Painted, baked-on steel. Color selected from manufacturer’s standard color range, RAL Classic Color System, (Guide Tracks).
   3. Door Curtain Seals: Twin black, rubber wear strips at throat of the guide tracks, with one PVC brush Lintel seal for the full width of the top of the door, Color: Black. Bottom Panel: Rubber, field serviceable seal for the door to ensure close fit with uneven thresholds and floors, Color: Black.
   4. Entrapment Protection Equipment: In-line Light Curtain System installed fitted to the outside face of Guide Tracks in compliance with UL 325 Standard for Safety, Door, Drapery, Gate, Louver, and Window Operators and Systems. Photoelectric sensors and electric reversing edges shall not be accepted as primary entrapment protection equipment.
   5. Door Curtain Slats: Refer to Drawings for intended slat configurations, types, and options. Product Door slats to consist of heavy-duty materials, designed to withstand wind loading indicated, in a continuous length for width of each door opening (without splices). Lighter weight, uninsulated, or rubber panels not accepted.
      1. Primary Panel Type: Solid Slat(s): Decotherm® interlocking concentrically curved (profile) insulated steel slats. Interior side shall include polyurethane foam abrasion pads, color: black, adhered to coiling-side face; number and spacing to be determined by door size. Factory Finish: Slat faces shall be Micrograin™ textured.

**[SELECT FROM THE FOLLOWING SOLID SLAT OPTIONS, DELETE THOSE NOT REQUIRED]**

* + - 1. **(Optional Equipment)** Window Portals: Inset Duratec® coated, clear double-pane acrylic windows with ½” air space and black rigid PVC frames. Placement [Center Grouped] [Width Justified].
      2. **(Optional Equipment)** Ventilation Portals: Inset portals with ½” air space and black rigid PVC frames. Open area per portal: 4.2 square inches. Placement [Center Grouped] [Width Justified].

**[SELECT FROM THE FOLLOWING SOLID SLAT FINISHES, DELETE THOSE NOT REQUIRED]**

* + - 1. **(Standard Finish)** Finish: Factory powder coat painted, Color: RAL 9006, White Aluminum, [Coiling-Side Face Only] [Non-Coiling Side Face Only] [Both Faces].
      2. **(Optional Finish)** Finish: Polyester Powder Coat Painted, baked-on steel. Color selected from manufacturer’s standard color range, RAL Classic Color System, [Coiling-Side Face Only] [Non-Coiling Side Face Only] [Both Faces].
    1. Other Slat Types (included standard): Bottom Profile (non-insulated): Interlocking flat-faced extruded anodized aluminum slat, including compressible rubber weather seal at base. Automatic reversing edge mechanisms in bottom profile will not be accepted as a primary entrapment protection device. Bottom Profile finishes to coordinate with Primary Slat Type finishes. Consult manufacturer for applications with custom Bottom Panel lower-edge angles conforming to sloped threshold conditions. Additional entrapment protection safety features are required (Photoelectric Sensor).
  1. Door Curtain Counterbalancing: Products shall not require counterbalancing or springs to operate. No exceptions considered.

1. FABRICATION
   1. Factory Production: Do not release doors for fabrication until all specified submittal materials have been reviewed, processed, and returned by the Architect as acceptable.
   2. Safety Labeling: Affix ‘High Performance Door Warning Label’ to one guide track vertically at a readable height, (5-feet) (1.5 m) above the bottom of track. Use only Door and Access Systems Manufacturers’ Association, (DASMA) created warning labels.
2. FINISHES
   1. Appearance of Finished Work: All components as provided, of overhead rapid coiling doors shall be factory finished. Noticeable variations of finish quality in the same piece are not acceptable.
   2. Finishing System: Optional Color Finishes: Guide Tracks, Brackets, and Hood Enclosures: baked-on polyester powder coat paint. Color as selected from manufacturer’s standard color range, RAL Classic color system.
3. ACCESSORIES
   1. General: Refer to Drawings including Door Schedules for basis of design for accessories, intended configurations, quantities, types, options, and remarks.

**[EDIT TO INCLUDE AS REQUIRED]**

* 1. **(Optional Equipment)** Hood (Motor and Roll Tube Enclosure): Form to entirely enclose coiled curtain panels and operating mechanism at door opening head and acting as entrapment protection and/or dust guard/ weather stop (exterior). Fabricate Hoods of hot-dipped galvanized G90 (0.9 oz./ft2) steel sheet. Coordinate finishes, including non-standard paint color selections for the Hood with other door component finishes, as approved by the Architect prior to fabrication.
     1. Hood Material Finish: **[SELECT FROM THE FOLLOWING HOOD FINISHES, DELETE THOSE NOT REQUIRED]**
        1. **(Standard Finish)** Finish: Galvanized steel, zinc, class G90 (Hood).
        2. **(Optional Finish)** Finish: Polyester Powder Coat Painted, baked-on steel. Color selected from manufacturer’s standard color range, RAL Classic Color System, (Hood).

**[EDIT TO INCLUDE AS REQUIRED]**

* 1. **(Optional Equipment)** Manufacturer Recommended:LED Lite-Advance System: Hörmann: Door operation indicating LED light strip safety system. Quantity: One (1) set. Provide flat retainer profiles for installation.

# PART 3 – EXECUTION

1. EXAMINATION
   1. Verification of Conditions: The doorway opening should be square and plumb, free of intrusion from obstructions, door threshold should be level, and host wall of sound construction and structural integrity to achieve the best possible installation.
2. PREPARATION
   1. Coordinate installation of overhead rapid coiling doors with other trades prior to commencement of work. Exterior doorway openings should be weatherproofed, flashed, and ready to receive finishes prior to commencing installation. Repair or replace damaged substrate materials and hold installation procedures until repairs are complete.
3. INSTALLATION
   1. General: Comply with manufacturer’s detailed written instructions for the installation of overhead rapid coiling doors.
      1. Installation may require the use of powered platforms, man-lifts, and vehicle-mounted work platforms.
      2. High voltage relevant electrical field wiring to be performed by registered electricians experienced, trained, and qualified to perform the work.
      3. Verify the quality of the mounting structure for suitability to perform as required. Inspect for signs of damage, premature wear.
      4. Handle all materials with care. Do not attempt to rectify or reuse damaged parts without express approval from the manufacturer.
   2. Exterior Mounted Hoods: Continue weather barrier system behind Hood. DO NOT expose sheathing, framing members, or building insulation behind Hood without weather barrier protection.
   3. Tolerances: the door must be installed in an opening that is the products manufactured finished size.
4. SYSTEMS STARTUP, Adjusting, Cleaning
   1. Initial Operation: Before initial operation of the door and putting into service, check that it is in good working order and free of defects.
      1. Test Run: After installing the door, test the functional safety. Operate the door no fewer than 30 cycles during the testing phase. Verify proper working order of all safety components, including Emergency-Off button.
   2. Starting and Adjusting: After successful completion of Test Run, examine lift system components for proper wear. Lubricate bearings and sliding parts; adjust doors to operate easily, free from warp, twist, or distortion and proper fitting for entire perimeter of opening.
   3. Cleaning and Care: During construction operations Installer shall provide progress cleaning that minimizes accumulation of dirt, dust, ice, snow, and standing water. Verify all protective films have been removed from the door prior to final cleaning.
      1. Use warm water together with a neutral, non-abrasive cleaning agent (household detergent, pH value 7, Isopropanol 99.9%).
      2. To clean the surface, use ONLY a soft cloth. Rinse off any dirt, dust, snow or ice particles with clean water. Never scrape ice, snow or foreign materials from the door. DO NOT rub over the panels when dry, otherwise risk of scratching the surface finish may occur.
5. CLOSEOUT ACTIVITIES
   1. Demonstration and Training: It shall be the responsibility of the Installer to demonstrate safe operating procedure of the overhead rapid coiling door to the Owner’s appointed staff or representative. Start-up Services: Engage a factory-authorized service representative to train and educate facilities maintenance personnel for ongoing management and maintenance of the door.
6. PROTECTION, Maintenance
   1. Protecting Installed Construction: Overhead rapid coiling doors not yet in use may be vulnerable to impact damage and abrasions. Protect completed work from accidental damage after installation, and prior to acceptance by the Owner. Doors not in use should be set out with safety cones, caution tape and signage noting the door as not operational.
   2. Maintenance Intervals: Consult Product Owner’s Manual for proper maintenance and testing requirements. Cleaning the door curtain is recommended as needed for removal of dirt accumulation.
7. ATTACHMENTS
   1. Hörmann High Performance Doors: Product Data Sheet, Steel Ranger™ Series – Model 9000 L.

END OF SECTION 08 33 23.13

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