

SECTION 083323

OVERHEAD COILING DOORS

ENTRE//MATIC

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Manual operated overhead rolling doors
- B. Electric operated overhead rolling doors
- C. Track and Framing
- D. Hardware

1.2 RELATED SECTIONS

- A. Section 04810 - Unit Masonry Assemblies: Prepared opening in masonry.
- B. Section 05500 – Metal Fabrications: - Steel framed door openings.
- C. Section 06100 – Rough Carpentry: Wood framing and blocking for door opening.
- D. Section 07900 - Joint Sealers: Perimeter sealant and backup materials.
- E. Section 08710 - Door Hardware: Cylinder locks.
- F. Section 09910 – Painting: Field painting
- G. Section 11150 - Parking Control Equipment: Remote door control.
- H. Division 16 Sections: Electrical service and connections for powered operators.

1.3 REFERENCES

- A. ASTM A 653/A 653M – Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- B. ASTM B 209/209M – Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- C. ASTM B 221/221M – Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.

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D. ANSI/DASMA 102-2011.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- 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.
 - 4. Operation and maintenance data.
 - 5. Nameplate data and ratings for motors.
- C. Shop Drawings: Include opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.5 WIND PERFORMANCE REQUIREMENTS

- A. Design doors to withstand positive and negative wind loads as calculated in accordance with applicable governing building codes.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the types of doors specified in this section with minimum five years documented experience.
- B. Installer Qualifications: Installation to be by qualified dealer in accordance with the manufacturer's installation instructions.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.

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 WARRANTY

- A. Standard Warranty: Two years from date of shipment against defects in material and workmanship

PART 2 PRODUCTS

2.1 MANUFACTURERS

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- A. Acceptable Manufacturer: Entrematic; 165 Carriage Court, Winston-Salem, NC 27105. ASD. Tel: (800) 503-3667. Fax: (336) 251-1851. Email: MarketingDept@amarr.com Website: www.amarr.com.
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 OVERHEAD COILING DOORS - GENERAL

- A. Curtain:
 - 1. Amarr 4000- Grade 40 interconnected steel flat slat conforming to ASTM A-653.
 - a. 22 gauge steel No. 5 flat slat for door width up to 18'4" and door height up to 18'4" tall with bottom bar made from two 2x2x1/8 inch (50x50x3.2 mm) structural steel angles
 - b. 20 gauge steel No. 5 flat slat for door width up to 24'4" and door height up to 24'4" tall with bottom bar made from two 2x2x1/8 inch (50x50x3.2 mm) structural steel angles
 - c. 20 gauge steel No. 5 flat slat perforated with 0.0625 inch (1.6 mm) diameter openings at 0.125 inch (3.2 mm) staggered centers for door width up to 24'4" and door height up to 24'4" tall with bottom bar made from two 2x2x1/8 inch (50x50x3.2 mm) structural steel angles
 - d. 18 gauge steel No. 4 flat slat for door width up to 40'4" and door height up to 36'4" tall with bottom bar made from two 2x2x1/8 inch (50x50x3.2 mm) structural steel angles
- B. Slat Finish:
 - 1. FinalCote™ Coating System for steel slats to include an ASTM A 653 galvanized base coating, bonderized coating for prime coat adhesion, corrosion inhibiting primer .2 mils per side, and thermosetting polyester top coat with a minimum thickness of .6 mils each side. FinalCote™ color options:
 - 1) Gray
 - 2) Tan
 - 3) White
 - 2. ColorCote™ Coating System for steel slats to include an ASTM A 653 galvanized base coating, bonderized coating for prime coat adhesion, and factory applied thermosetting powder coating applied with a minimum thickness of 2.5 mils. The color shall be selected by the architect and shall be chosen from
 - 1) Standard color chart
 - 2) Custom color selection
 - 3. Galvanized Steel: Phosphate and bonding treatment only, no paint finish.
- C. Guides:
 - 1. Fabricate with structural steel angles bolted together with 3/8" fasteners to form a channel for the curtain to travel.
 - 2. The wall angle portion shall be continuous and fastened to the surrounding structure with either minimum 1/2" fasteners or welds, both on 36" centers,
 - 3. Provide windlock bars of same material when windlocks are required to meet specified wind load.
 - 4. Top of inner and outer guide angles to be flared outwards to form bellmouth for smooth entry of curtain into guides.

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5. Provide removable guide stoppers to prevent over travel of curtain and bottom bar
 6. Guide Finish
 - a. The finish on the guide angles shall be one the Thermosetting Powder Coating finish as indicated in the curtain section.
 - b. ASTM A 123, Grade 85 zinc coating, hot-dip galvanized after fabrication
- D. Barrel:
1. Steel pipe of not less than 4" in diameter capable of supporting curtain load with maximum deflection of 0.03 inches per foot (2.5 mm per meter) of width.
- E. Springs:
1. Oil-tempered torsion spring assembly designed for proper balance of door to ensure that maximum effort to operate will not exceed 30 lbs (133 N). Provide wheel for applying and adjusting spring torque.
- F. Brackets:
1. The brackets shall be constructed of steel not less than 1/4" thick and shall be bolted to the wall angle with minimum 1/2" fasteners.
 - a. The finish on the guide angles shall be one the Thermosetting Powder Coating finish as indicated in the curtain section.
 - b. ASTM A 123, Grade 85 zinc coating, hot-dip galvanized after fabrication.
- G. Hood:
1. 24 gauge galvanized steel with reinforced top and bottom edges.
 - a. The finish on the hood shall be the finish as indicated in the curtain section
 2. Provide minimum 1/4 inch (6.35 mm) steel intermediate support brackets as required to prevent excessive sag
- 2.3 LOCKING MECHANISM
- A. Door shall be secured by means of a chain lock.
 - B. Door shall be secured by means of cylinder locks, one at each jamb.
 - C. Door shall be secured by means of cylinder locks, operable from both sides of coil.
 - D. Door shall be secured by means of Slide Bolts
- 2.4 OPERATION
- A. Manual Push-Up
 1. Provide lift handles on 10th slat and pole with hook..
 - B. Manual Chain Hoist
 1. Provide chain hoist operator with endless steel chain, chain pocket wheel and guard, geared reduction unit, and chain keeper secured to guide.
 - C. Manual Crank Hoist
 1. Provide crank hoist operator including crank gear box, steel crank drive shaft and geared reduction unit. Fabricate gear box to completely enclose operating mechanism and be oil-tight.
 - D. Electric Motor:
 1. Model MG Electric Motor Operator, industrial duty - rated for a maximum of 20 cycles per hour, cULus listed, Totally Enclosed Non Ventilated gear head

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operator(s) with horse power rating as recommended by door manufacture for size and type of door

- a. Provide complete with electric motor and factory pre-wired motor control terminals, maintenance free solenoid actuated brake
 - b. Motor shall be high starting torque, industrial type, protected against overload with an auto-reset thermal sensing device.
 - c. Primary speed reduction shall be heavy-duty, lubricated gears with mechanical braking to hold the door in any position.
 - d. Operator shall be equipped with
 - 1) An emergency manual chain hoist assembly that safely cuts operator power when engaged. A disconnect chain shall not be required to engage or release the manual chain hoist.
 - 2) A disconnect cable for auxiliary push-up operation.
 - e. Operator drive and door driven sprockets shall be provided with #50 roller chain.
 - f. Provide an integral Motor Mounted Interlock system to prevent damage to door and operator when mechanical door locking devices are provided.
 - g. Operator shall be capable of driving the door at a speed of 8 to 9 inches per second (20 to 23 cm/sec).
 - h. Fully adjustable, driven linear screw type cam limit switch mechanism shall synchronize the operator with the door.
 - i. The electrical contractor shall mount the control station(s) and supply the appropriate disconnect switch, all conduit and wiring per the overhead door wiring instructions
 - j. The motor shall have the correct voltage and phase needed.
 - 1) 115 volts single phase.
 - 2) 230 volts single phase.
 - 3) 230 volts three phase.
 - 4) 460 volts three phase.
2. Model SG Electric Motor Operator, continuous duty, cULus listed, Totally Enclosed Fan Cooled gear head operator(s) with horse power rating as recommended by door manufacture for size and type of door.
- a. Provide complete with electric motor and factory pre-wired motor control terminals, maintenance free solenoid actuated brake, emergency manual chain hoist provided up to 2 hp and control station(s).
 - b. Motor shall be high starting torque, industrial type, with overload protection.
 - c. Primary speed reduction shall be heavy-duty gears running in grease or oil bath with mechanical braking to hold the door in any position.
 - d. When equipped, the emergency manual chain hoist assembly is automatically disengaged when motor is energized. A disconnect chain shall not be required to engage or release the manual chain hoist.
 - e. Operator drive and door driven sprockets shall be provided with minimum #50 roller chain.
 - f. Operator shall be capable of driving the door at a speed of 8 to 9 inches per second (20 to 23 cm/sec).
 - g. Fully adjustable, driven linear screw type cam limit switch mechanism shall synchronize the operator with the door.
 - h. The motor shall be removable without affecting the limit switch settings.
 - i. The electrical contractor shall mount the control station(s) and supply the appropriate disconnect switch, all conduit and wiring per the overhead door wiring instructions.

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- E. Electric Motor Accessories
 - 1. Primary Monitored Entrapment Protection Entrapment Protection: (*Required for momentary contact including radio control operation*)
 - a. Electric sensing edge monitored to meet UL 325-2010.
 - b. Photoelectric sensors monitored to meet UL 325-2010.
 - 2. Ancillary Entrapment Protection (optional, used to supplement primary entrapment protection or basic constant-pressure-to-close):
 - a. Pneumatic Sensing Edge up to 22'.
 - b. Retro-Reflective photo sensor.
 - 3. Operator Control Mounting:
 - a. Flush Mount.
 - b. Surface Mount.
 - 4. Operator Control Operation
 - a. Push-button operated control stations with open, close, and stop buttons.
 - b. Key operated control stations with open, close, and stop buttons.
 - c. Push-button and key operated control stations with open, close, and stop buttons.
 - 5. Operator Control Location
 - a. Interior location.
 - b. Exterior location.
 - c. Both interior and exterior location.
 - 6. Special Operation:
 - a. Vehicle detector operation.
 - b. Radio control operation.
 - c. Card reader control.
 - d. Photocell operation.
 - e. Door timer operation.
 - f. Explosion and dust ignition proof control wiring.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates upon which work will be installed and verify conditions are in accordance with approved shop drawings
- B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates
- C. Verify wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

3.2 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
 - 1. Doors to be face mounted on a prepared surface.
 - 2. Doors to be between jamb mounted on a prepared surface.
- B. Anchor assembly to wall construction and building framing without distortion.
- C. Secure guides to structural members or solid backing only.

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- D. Fit and align curtain assembly, guides and operating hardware.
- E. Adjust door assembly and counter balance to smooth operation.

3.3 CLEANING

- A. Clean surfaces soiled by work as recommended by manufacturer.
- B. Remove surplus materials and debris from the site.

3.4 PROTECTION

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

END OF SECTION

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