

SECTION 08360
OVERHEAD DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Architectural Series.
 - 1. Aluminum Full View Sectional Overhead Door.
 - 2. Electric door operator and controls
 - 3. Operating hardware tracks and support

1.2 RELATED SECTIONS

- A. Section 05500 - Metal Fabrications: Steel frame and supports.
- B. Section 06114 - Wood Blocking and Curbing: Rough wood framing and blocking for door opening.
- C. Section 07900 - Joint Seals: Perimeter sealant and backup materials.
- D. Section 08710 - Door Hardware: Cylinder locks.
- E. Section 09900 - Paints and Coatings: Field painting.
- F. Section 16130 - Raceway and Boxes: Empty conduit from control station to door operator.
- G. Section 16150 - Wiring Connections: Electrical service to door operator.

1.3 REFERENCES

- A. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures
- B. ANSI / DASMA 102; American National Standard specifications for sectional overhead type doors.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Installation methods.
 - 3. Operation and maintenance data.
 - 4. 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. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.5 WIND PERFORMANCE REQUIREMENTS

- A. Design doors to withstand positive and negative wind loads as calculated in accordance with applicable building code and detailed in structural documents.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the types of doors specified in this section, with not less than ten years of documented experience.
- B. Installer Qualifications: Company specializing in installing the types of products specified in this section, with minimum of five years of documented experience, and approved by the door manufacturer.

1.7 WARRANTY

- A. Finish Limited Warranty:
 - 1. Standard Paint – 5 Years
 - 2. Custom Color Option (Color Blast® Finish) – 5 years

3. Parts and Hardware - 1 year

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. Clopay Corporation
- B. Substitutions not permitted:
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 SECTIONAL OVERHEAD DOOR: 904U

- A. 904U: Aluminum Full View Sectional Door, Polyurethane Insulated
 - 1. Panel Sections: 2-1/8 inches (54 mm) thick extruded 6053-T5 aluminum.
 - 2. Rails and Stiles: Polyurethane foam injected.
 - 3. Astragal: U-shaped flexible PVC in retainer of full-length 0.055 inch (1.4 mm) rigid PVC.
 - 4. U-Factor: 0.86 (with clear insulated glass)
 - 5. R-Value: 3.8 (with clear insulated glass)
 - 6. Air Infiltration: 0.15cfm/ft2
 - 7. Aluminum Finish:
 - a. Factory pre-painted white
 - b. Factory pre-painted brown
 - c. Factory pre-painted simulated bronze anodized
 - d. Clear anodized
 - e. Bronze anodized.
 - f. Dark bronze anodized
 - g. Black anodized
 - h. Color Blast® (Sherwin Williams® Color Code – High quality durable two-part Polane® paint system) SW # _____.
 - 8. Windows:
 - a. Glazing thickness
 - i. 1.8 inch (3 mm)
 - ii. 1/4 inch (3 mm)
 - iii. 1/2 inch (13 mm)
 - iv. 5/8-inch (16mm) Polygal
 - b. Glazing type
 - i. DSB glass
 - ii. Tempered glass
 - iii. Acrylic
 - iv. Triple Wall Polygal
 - v. Low E Coated
 - vi. Solid Aluminum Panel (color matched)
 - vii. Custom _____
 - c. Glazing tint
 - i. Clear
 - ii. Bronze
 - iii. Gray
 - iv. Frosted/Satin Etched
 - v. Custom _____
 - 9. Locking:
 - a. Provide one inside slide lock with interlock.
 - b. Provide two inside slide locks with interlock
 - c. No lock
 - 10. Weather-stripping: Provide complete perimeter seals. Provide flexible top seal, flexible jamb seal and U-shaped bottom seal
 - 11. Track:
 - a. Provide track configuration to maximize headroom available per plans
 - b. 2 inches (50 mm) track designed for 2" diameter rollers. Vertical tracks minimum 0.061 inch (1.55 mm) galvanized steel. Horizontal tracks minimum 0.075 inch (1.91 mm) galvanized steel.
 - c. 3 inches (75 mm) track designed for 3" diameter rollers. Vertical and horizontal tracks minimum 0.096 inch (2.43 mm) galvanized steel.

12. Spring Counterbalance: Torsion spring counterbalance mechanism sized to weight of the door, with high strength galvanized aircraft cable with minimum 7 to 1 safety factor.
 - a. Standard Cycle Spring: 10,000 cycles.
 - b. High Cycle Spring: 25,000 cycles.
 - c. High Cycle Spring: 50,000 cycles.
 - d. High Cycle Spring: 100,000 cycles.
 - e. Maximum cycles on a single shaft line.
13. Manual Operation
 - a. ControlGard® SD direct drive chain hoist with integral brake mechanism that will immediately stop upward or downward travel and maintain the door in a stationary position when the hand chain is released by the user.
 - i. 2.8:1 primary reduction in 1" bore
 - ii. 2.8:1 primary reduction in 1-1/4" bore
 - iii. 3.7:1 primary reduction in 1" bore
 - iv. 3.7:1 primary reduction in 1-1/4" bore
 - b. Pull rope.

2.3 ELECTRIC DOOR OPERATORS

1. General: Provide electric door operator provided by door manufacturer for door with operational life specified complete with electric motor and factory pre-wired motor controls, starter, gear-reduction unit, clutch, remote-control stations, control devices, integral gearing for locking door, and accessories required for proper operation. Comply with NFPA 70
 - a. Solenoid-operated brake
2. Disconnect Device: Provide hand-operated disconnect or mechanism for emergency manual operation while disconnecting motor, without affecting timing of limit switch. Mount disconnect and operator so they are accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.
3. Design operator so motor may be removed without disturbing limit switch adjustment and without affecting emergency auxiliary operator.
4. Provide control equipment complying with NEMA ICS1, NEMA ICS 2, and NEMA ICS 6, with NFPA 70 Class 2 control circuit, maximum 24-V, AC or DC..
5. Electric Motors: Provide high-starting torque, reversible, continuous-duty, Class A insulated, electric motor, complying with NEMA MG 1, with overload protection, sized to start, accelerate, and operate door in either direction, from any position, at not less than 2/3 fps (0.2 m/s) and not more than 1 fps (.03m/s), without exceeding nameplate ratings or considering service factor.
 - a. Type: Mechanical.
 - b. Type: Solid State.
 - c. Type: Jackshaft.
 - d. Type: Trolley.
 - e. HP:
 - i. 1/3 hp (246 W).
 - ii. 1/2 hp (373 W).
 - iii. 3/4hp (559 W).
 - iv. 1 hp (746 W).
 - f. Power Characteristics
 - i. 115 V.
 - ii. 220 V.
 - iii. 460 V.
 - iv. 1 phase.
 - v. 3 phase.
 - g. Service Factor:
 - i. NEMA MG 1.
 - ii. NEMA 4 watertight.
 - iii. NEMA 9 waterproof.
 - iv. NEMA 10 oil resistant.
 - v. NEMA 12 explosion resistant.
 - h. Coordinate wiring requirements and electrical characteristics of motors with building electrical system.
6. Remote Control Station: Provide momentary contact, 3-button control station with push - button controls labeled "Open", "Close" and "Stop".
7. Provide interior units, fully guarded, surface mounted, heavy-duty type, with general-purpose NEMA ICS 6 enclosure in one of the following types:
 - a. Enclosure Type: Type 1

- b. Enclosure Type: Type 4
 - c. Enclosure Type: Type 12
8. Obstruction Detection Device: Provide each motorized door with indicated external automatic safety sensor able to protect full width of door opening. Activation of sensor immediately stops and reverses downward door travel
- a. Sensor Edge: Provide each motorized door with an automatic safety sensing edge, located within astragal or weather stripping mounted to bottom bar. Contact with sensor immediately stops and reverses downward door travel. Connect to control circuit using manufacturer's standard take-up reel or self-coiling cord. Sensing edge shall be operated by:
 - i. Electric.
 - ii. Pneumatic.
 - iii. Electric Fail safe.
 - iv. Pneumatic Fail safe.
 - b. Photo-electric control: Provide each motorized door with a photo-electric device that will stop and reverse the downward door travel if the light beam is broken or blocked. Device shall be:
 - i. NEMA Type 1.
 - ii. NEMA Type 4.
9. Limit Switches: Provide adjustable switches, interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.
10. Radio Controls: Provide 3 button radio transmitter to provide remote open, close, stop functionality.
- a. Provide external antenna and coaxial wiring to receiver to enhance radio control reception.
11. Provide auxiliary chain hoist: for emergency manual operation while disconnecting motor, without affecting timing of limit switch. Mount disconnect and operator so they are accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine wall and overhead areas, including opening framing and blocking, with installer present, for compliance with requirements for installation tolerances, clearances, and other conditions affecting performance of Work in this Section.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If substrate preparation is the responsibility of another entity, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. 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. Install overhead doors and track in accordance with approved shop drawings and the manufacturer's printed instructions.

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