



SECTION 08 36 00 OVERHEAD DOORS

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Commercial Insulated Steel Sectional Overhead Doors.
 - 1. Energy Series with Intellicore
 - 2. Steel doors with minor ribs, thermally-broken, polyurethane insulated. (**Models 3730**)
- B. Electrical operators and controls.
- C. Operating hardware, tracks, and support.

1.2 RELATED SECTIONS

- A. 03 30 00 - Cast-In-Place Concrete.
- B. 04 20 00 - Unit Masonry Assemblies.
- C. 05 50 00 - Metal Fabrications.
- D. 06 10 00- Rough Carpentry.
- E. 07 90 00 - Joint Seals.
- F. 08 71 00 - Door Hardware and locks.
- G. 09 90 00 - Paints and Coatings.
- H. 11 15 00 - Parking Control Equipment: Remote door control.
- I. 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 (Galvanized) 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.
- D. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
- E. DASMA TDS-163 - R-Value and U-Factor as Applied to a Residential or Commercial Garage Door.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Clopay model specific data and information.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation instructions.
 - 4. Operation and maintenance data.
- C. Shop Drawings: Include opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.
- D. Selection Samples: For finish specified, two complete sets of color chips representing

manufacturer's available colors and patterns.

1.5 WIND PERFORMANCE REQUIREMENTS

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

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 Warranty: Provide manufacturer's standard finish warranty against cracking, checking or peeling.
 - 1. Standard Finish warranty period: 10 years.
 - 2. Color Blast Finish Warranty period: 5 years.
- B. Delamination Warranty: Provide manufacturer's standard warranty against delamination.
 - 1. Warranty period: 10 years.
- C. Parts and Hardware Limited Warranty
 - 1. 1 year warranty
 - 2. 8 year extended warranty

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Clopay Corporation 8585 Duke Blvd.; Mason, OH 45040; Toll Free Tel: 800-526-4301; Tel: 513-770-4800; Fax: 888-434-3193; Email: arch@clopay.com; Web: <https://www.clopaydoor.com>
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 STEEL DOORS WITH MINOR RIBS, THERMALLY-BROKEN, POLYURETHANE INSULATED

- A. Premium 3-inch (75 mm) Door: Clopay Model 3730.
 - 1. Style: Steel doors with minor ribs, thermally-broken, polyurethane insulated.
 - 2. Maximum Door Size: 30 feet 2 inches, (9.2 m) wide by 18 ft (7.3 m) high.
 - 3. Overall Panel Thickness: 3 inches (75 mm).
 - 4. Steel Skin Thickness: Minimum 27 gauge 0.016 inch (0.40 mm) exterior; minimum 28 gauge 0.015 inch (0.38 mm) interior.
 - 5. Stiles: Galvanized steel end stiles, minimum 0.061 inch (1.55 mm) thick, engineered for easy hardware attachment through pre-punched holes.
 - 6. Bottom panel section reinforced with continuous 0.050 inch (1.27 mm) aluminum astragal retainer with U-shaped flexible TPE astragal.
 - 7. Insulation: CFC-free and HCFC-free polyurethane, fully encapsulated.
 - 8. Thermal Resistance (R-value): 27.2 deg F hr sq ft/Btu (4.40 (K sq m)/W); calculated door section R-value in accordance with DASMA TDS-163.
 - 9. Thermal Values: U-Factor 0.15

10. Air Infiltration: 0.20 cfm at 25 mph.
11. Weatherstripping: Provide complete perimeter seals selected from manufacturer's standard options. Provide flexible top seal, flexible jamb seal and U shaped bottom seal.
12. Insulation: CFC-free and HCFC-free polyurethane, fully encapsulated.
13. Windows:
 - a. None.
 - b. PVC windows measuring 8 inches by 24 inches (200 mm by 600 mm)
 - 1) Glazing: 2 inch nominal (51 mm) insulated triple pane DSB glass.
 - c. PVC windows measuring 12 inches by 24 inches (305 mm by 600 mm)
 - 1) Glazing: 2 inch nominal (51 mm) insulated triple pane DSB glass.
14. Finish: Stucco embossed texture with 0.040 inch (100 mm) minor ribs 4 inches or 5 inches (100 or 125 mm) on center, white interior, exterior as follows:
 - a. White.
 - b. Brown.
1. Custom Color Blast® (Sherwin Williams® Color Code - High quality durable two-part Polane® paint system) SW # _____ SW Color Name _____
Paint system should meet or exceed AAMA 2604 standards.
2. Locking: No Lock required if motor operated. Specify Keyed Switch for security.
3. Locking: Inside spring loaded slide bolt lock on end stile that engages slot in track.
 - a. Provide one inside slide lock.
 - b. Provide two inside slide lock.
 - c. Provide five pin cylinder lock with outside key.
4. Weatherstripping: Provide complete perimeter seals selected from manufacturer's standard options. Provide flexible top seal, flexible jamb seal and U shaped bottom seal.
5. Tracks: Vertical tracks minimum 0.061 inch (1.55 mm) galvanized steel tapered and mounted for wedge type closing. Horizontal tracks minimum 0.075 inch (1.91 mm) galvanized steel, reinforced with minimum 0.0897 inch (2.28 mm) galvanized steel angles as required:
 - a. Track Width: 2 inches (50 mm).
 - b. Track Width: 3 inches (75 mm).
 - c. Provide standard lift tracks with 15 inches (381 mm) radius track as indicated.
 - d. Provide vertical lift tracks as indicated.
 - e. Provide high lift tracks as indicated.
 - f. Provide tracks that follow roof slope tracks as indicated.
 - g. Provide low headroom tracks as indicated.
 - h. Provide track configuration to maximize headroom available per plans
6. Spring Counterbalance: Torsion spring counterbalance mechanism sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of die cast aluminum with high strength galvanized aircraft cable with minimum 7 to 1 safety factor.
 - a. Standard Cycle Spring: 10,000 cycle.
 - 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

2.3 ELECTRIC DOOR OPERATORS

- A. 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.

1. Optional: Solenoid-operated brake.
- B. 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.
- C. Design operator so motor may be removed without disturbing limit switch adjustment and without affecting emergency auxiliary operator.
- D. 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.
- E. 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.
 1. Type: Mechanical.
 2. Type: Solid State.
 3. Type: Jackshaft.
 4. Type: Trolley.
 5. HP:
 - a. 1/3 hp (246 W).
 - b. 1/2 hp (373 W).
 - c. 3/4hp (559 W).
 - d. 1 hp (746 W).
 6. Power Characteristics:
 - a. 115 V.
 - b. 220 V.
 - c. 460 V.
 - d. 1 phase.
 - e. 3 phase.
 7. Service Factor:
 - a. NEMA MG 1.
 - b. NEMA 4 watertight.
 - c. NEMA 9 waterproof.
 - d. NEMA 10 oil resistant.
 - e. NEMA 12 explosion resistant.
 8. Coordinate wiring requirements and electrical characteristics of motors with building electrical system.
- F. Remote Control Station: Provide momentary contact, 3-button control station with push - button controls labeled "Open", "Close" and "Stop".
- G. Remote Control Station: Provide continuous contact, 3-button control station with push - button controls labeled "Open", "Close" and "Stop".
- H. Provide interior units, fully guarded, surface mounted, heavy-duty type, with general-purpose NEMA ICS 6 enclosure in one of the following types:
 1. Enclosure Type: Type 1.
 2. Enclosure Type: Type 4.
 3. Enclosure Type: Type 12.
- I. 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.
 1. 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:
 - a. Electric.
 - b. Pneumatic.

- c. Electric Fail safe.
 - d. Pneumatic Fail safe.
 - 2. 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:
 - a. NEMA Type 1.
 - b. NEMA Type 4.
- J. Limit Switches: Provide adjustable switches, interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.
- K. Radio Controls: Provide 3 button radio transmitter to provide remote open, close, stop functionality.
 - 1. Provide external antenna and coaxial wiring to receiver to enhance radio control reception.
- L. 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 jambs, wall and overhead areas, including opening framing and blocking for compliance with requirements for installation tolerances, clearances, and other conditions affecting performance of Work in this Section and as required per Shop Drawings.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. If substrate preparation is the responsibility of another contractor, notify General Contractor or 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