



America's Favorite Garage Doors®

## SECTION 08360

### OVERHEAD DOORS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Sectional overhead doors of the following types:
  - 1. Raised panel steel doors, polystyrene insulated. (Model 664V)
  - 2. Electric door operators

##### 1.2 RELATED SECTIONS

- A. Section 05500 - Metal Fabrications: Steel channel opening frame.
- B. Section 06100 - Rough Carpentry: Rough wood framing and blocking for door opening.
- C. Section 08710 - Door Hardware: Lock cylinders.
- D. Section 11150 - Parking Control Equipment: Remote door control.
- E. 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 A 924/A 924M - Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
- C. ASTM B 209/209M - Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- D. ASTM B 221/221M - Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

##### 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 specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish 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 building code.
  - 1. Design Wind Load: \_\_\_\_\_lb/sf (\_\_\_\_\_kPa).
  - 2. Safety Factor: 1.5 times design wind load.

#### 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 rust through.
  - 1. Warranty period: 10 years.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Clopay Building Products Company, which is located at: 8585 Duke Blvd. ASD; Mason, OH 45040-3101; Toll Free Tel: 800-526-4301 prompt #3; Fax: 888-434-3193; Email: CIA@clopay.com Web: [www.clopaycommercial.com](http://www.clopaycommercial.com)
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

#### 2.2 RAISED PANEL STEEL DOORS, POLYSTYRENE INSULATED

- A. Door Construction:
  - 1. Panels: Steel embossed woodgrain raised panel steel door (Polystyrene insulation with vinyl back cover).
  - 2. Steel Skin: Formed from roll formed commercial or drawing quality steel sheet, hot-dip galvanized per ASTM A 924/A 924M and ASTM A 653/A 653M, pre-painted with primer and baked-on polyester topcoat.
  - 3. Section Joint: Sections to form a weather-tight tongue and groove joint.
  - 4. Reinforcing: Galvanized and primed steel reinforcement located under each hinge location, pre-punched for hinge attachment.
  - 5. Handle: 3 inches (76 mm) horizontal galvanized steel step plate / lift handle

shall be located on bottom section.

- B. Heavy Duty Door: Clopay Model 664V.
1. Maximum Door Size: 20 ft (6.10 m) wide by 18 ft (5.49 m) high.
  2. Overall Panel Thickness: 1-7/8 inches (47 mm).
  3. Exterior Skin Thickness: Minimum 24 gauge 0.022 inch (0.56 mm) exterior.
  4. Interior Skin: Polyethylene vinyl backer. Color: white.
  5. Stiles: Steel prepainted end stiles, minimum 18 gauge (0.049 inch) (1.25 mm) thick, up to 16 feet – 2 inches (4.9 m) wide. Over 16 feet – 2 inches (4.9 m) provide double end stile composed of one 18 gauge (.049 inch) (1.25 mm) minimum plus one 20 gauge (.035 inch) (.89 mm) minimum center stile.
  6. Thermal Resistance (R-value): 6.3 deg F hr sq ft/Btu (1.1 (K sq m)/W); calculated door section R-value in accordance with DASMA TDS-163.
  7. Windows: None.
  8. Window: PVC windows measuring 12 inches by 19-1/2 inches (305 mm by 495 mm):
  9. Window: PVC windows measuring 12 inches by 40-1/2 inches (305 mm by 1029 mm):
    - a. Glazing: 1/8 inch (3 mm) DSB sheet glass.
    - b. Glazing: 1/8 inch (3 mm) clear acrylic sheet.
    - c. Glazing: 1/8 inch (3 mm) obscure sheet glass.
  10. Finish: Raised panel wood grain exterior design, pre-finished exterior with 1-mil, three coat baked-on polyester topcoat over primer on a phosphate coating, as follows:
    - a. Snowmist White.
    - b. Almond.
    - c. Desert Tan.
    - d. Sandtone.
    - e. Chocolate Brown.
  11. Locking: No Lock.
  12. Locking: Inside spring loaded slide bolt lock on end stile that engages slot in track.
    - a. Provide a four point cylinder lock with L-handle and a single lock bar.
  13. Weatherstripping: Section joint seal tape shall be Neoprene foam seal, one-piece full length between joint of sections. Field installed jamb/header weather-stripping shall be extruded vinyl, placed in contact with outside of door sections. Astragal shall be full length of section, .040 inch (1.02 mm) aluminum retainer with U-shaped flexible PVC vinyl.
  14. Hinge and Roller Assemblies: Hinges and brackets shall be 14 gauge (.070 inch), (1.78 mm) minimum galvanized steel. Ten-ball bearing steel rollers to be full-floating ball bearing in case hardened steel races and mounted to fit the taper of the track.
  15. Tracks: Vertical tracks minimum 16 gauge (0.061 inch) (1.55 mm) galvanized steel tapered and mounted for wedge type closing. Horizontal tracks minimum 14 gauge (0.075 inch) (1.91 mm) galvanized steel, reinforced with minimum 13 gauge (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.
  16. Track Mounting: (Bracket Mounting) Galvanized steel mounting brackets 12 gauge (.101 inch), (2.57 mm) minimum thick for wood jambs.

17. Track Mounting: (Continuous or Reverse Galvanized Steel Angle Mounting) 12 gauge (.101 inch), (2.57 mm) minimum angle for steel jambs; splice plates 12 gauge (.101 inch), (2.57 mm) minimum.
18. Spring Counterbalance: Torsion type, low stress, helically wound, oil-tempered spring on a galvanized steel tube or solid steel shaft. Die cast aluminum. Pre-formed galvanized steel aircraft cable to provide a minimum of a 7:1 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.

## 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. 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 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.

1. Proceed with installation only after unsatisfactory conditions have been corrected.
  - B. If substrate preparation is the responsibility of another installer, 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