



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. Deep ribbed steel doors, polystyrene insulated. (Model 524S)
  - 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 DEEP RIBBED STEEL DOORS, POLYSTYRENE INSULATED

- A. Door Construction:
  - 1. Panel Sections: 2 inches (52 mm) thick roll formed commercial quality steel panel sections, hot-dip galvanized per ASTM A 924/A 924M and ASTM A 653/A 653M, phosphatized and prepainted with primer and baked-on polyester topcoat. Panel faces reinforced with two 1/2 inch (13 mm) deep ribs on 8 inches (200 mm) centers, complemented by six 1/8 inch (3 mm) beads on 2 inches (50 mm) centers. Sections formed to create weathertight tongue and groove meeting rail. Bottom panel section reinforced with continuous 0.050 inch (1.27 mm) aluminum astragal retainer with U-shaped flexible PVC astragal.

2. Door Stiles: Galvanized, primed, and polyester top-coated turn-down steel end stiles; wrap face of panel sections a full 1-3/8 inches (35 mm); 0.049 inch (1.25 mm) minimum thickness up to 14 ft-2 inches (4.32 m), otherwise 0.61 inch (1.55 mm) thickness; engineered for easy hardware attachment through pre-punched holes.
3. Insulation: 1-3/8 inches thick (35 mm) polystyrene insulation with fire retardant additive to meet requirements of UL R-1894A, covered by steel backers on interior for durability; thermal resistance (R-value), 6.83 hr sq ft deg F/BTU (1.2 K sq m/W); calculated door section R-value in accordance with DASMA TDS-163.
4. Connections: Fasten panel sections and stiles with manufacturer's Tog-L-Loc joining system.

B. Heavy Duty Door: Clopay Model 524S.

1. Maximum Door Size: 24 ft, 2 inches (8.0 m) wide and 20 ft (6.1 m) high.
2. Steel Skin Thickness: Minimum 0.022 inch (0.56 mm).
3. Windows: None.
4. Windows: 24 inches by 6 inches (150 mm by 610 mm) with polypropylene frame to match door color.
  - a. Glazing: 1/8 inch (3 mm) DSB sheet glass glazing.
  - b. Glazing: 1/8 inch (3 mm) tempered sheet glass glazing.
  - c. Glazing: 1/8 inch (3 mm) acrylic glazing.
  - d. Glazing: 1/8 inch (3 mm) clear polycarbonate glazing.
  - e. Glazing: 1/4 inch (6 mm) DSB sheet glass glazing.
  - f. Glazing: 1/4 inch (6 mm) tempered sheet glass glazing.
  - g. Glazing: 1/4 inch (6 mm) acrylic glazing.
  - h. Glazing: 1/4 inch (6 mm) clear polycarbonate glazing.
5. Windows: 24 inches by 12 inches (610 mm by 300 mm) with polypropylene frame to match door color.
  - a. Glazing: 1/8 inch (3 mm) DSB sheet glass glazing.
  - b. Glazing: 1/8 inch (3 mm) tempered sheet glass glazing.
  - c. Glazing: 1/8 inch (3 mm) acrylic glazing.
  - d. Glazing: 1/8 inch (3 mm) clear polycarbonate glazing.
  - e. Glazing: 1/4 inch (6 mm) DSB sheet glass glazing.
  - f. Glazing: 1/4 inch (6 mm) tempered sheet glass glazing.
  - g. Glazing: 1/4 inch (6 mm) acrylic glazing.
  - h. Glazing: 1/4 inch (6 mm) clear polycarbonate glazing.
  - i. Glazing: 1/4 inch (6 mm) wire glazing.
6. Windows: Full-view sections, prepainted to match door finish.
  - a. Glazing: 1/8 inch (3 mm) DSB sheet glass glazing.
  - b. Glazing: 1/8 inch (3 mm) tempered sheet glass glazing.
  - c. Glazing: 1/8 inch (3 mm) acrylic glazing.
  - d. Glazing: 1/8 inch (3 mm) clear polycarbonate glazing.
  - e. Glazing: 1/4 inch (6 mm) DSB sheet glass glazing.
  - f. Glazing: 1/4 inch (6 mm) tempered sheet glass glazing.
  - g. Glazing: 1/4 inch (6 mm) acrylic glazing.
  - h. Glazing: 1/4 inch (6 mm) clear polycarbonate glazing.
7. Finish: Exterior 1 mil (.025 mm) coating; interior 0.5 mil (0.013 mm) coating; color as follows:
  - a. White.
  - b. Brown.
  - c. Tan.
  - d. Gray.
  - e. Trinar White.
8. Locking: No Lock.

9. 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.
10. Weatherstripping: Provide complete perimeter seals selected from manufacturer's standard options. Provide flexible top seal, flexible jamb seal and U shaped bottom seal.
11. 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.
12. 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.
13. Break-Away Bottom Section: Integral part of door; with fiberglass or 1/8 inch (3 mm) polycarbonate lined bottom section with flexible neoprene rubber side edges; exterior to match door face.
  - a. Single breakaway bottom section for doors up to 20 feet (6 m) wide.
  - b. Double breakaway bottom section for doors up to 14 feet (4.3 m) wide.
14. Pass Door (Walk-Through Service Door): Integral part of door; 32 inches (813 mm) by 80 inches (2032 mm) with aluminum frame, welded corners, geared hinge, and pneumatic door closer; exterior matching door face; integral shiplap weather seal; keyed dead latch security lock.

## 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