

SECTION 08360

SECTIONAL OVERHEAD DOORS



PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Insulated Steel Doors
- B. Commercial Steel Doors
- C. Aluminum Doors
- D. Track and Framing
- E. 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 11150 - Parking Control Equipment: Remote door control.
- G. 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.
- D. ANSI/DASMA 102-2011.

Door specifications and technical data subject to change without notice.

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. Paint finish: 10-year warranty against rust through from cracking, checking or peeling of the paint finish.
- B. Delamination: 10-year warranty against delamination.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Amarr; 165 Carriage Court, Winston-Salem, NC 27105. ASD. Tel: (800) 503-3667. Fax: (336) 251-1851. Email: Marketing@amarr.com Website: www.amarr.com.

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- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 OVERHEAD DOORS - GENERAL

- A. Provide each door with door sections, brackets, tracks, counterbalance mechanisms and hardware to suit the opening and headroom available.
- B. Hardware:
 - 1. Minimum of 14 gauge galvanized steel hinges and 13 gauge galvanized steel track brackets.
 - 2. Rollers have 10 ball bearings with casehardened inner and outer races.
 - 3. Sliding end stile locking device provided with spring-loaded bolt for inside operation only.
 - 4. Doors 16 feet 4 inches (5102 mm) and wider provided with double end hinges and stiles and long stem rollers.
- C. Track: 2 inches (51 mm) or 3 inches (76 mm) as required.
 - 1. Vertical Track:
 - a. 2 inch vertical track 17 or 19-gauge minimum galvanized steel, inclined using adjustable brackets to assure weather tight closure at the jambs.
 - b. 3 inch vertical track 12-gauge minimum galvanized steel inclined using adjustable tapered reverse angle to assure a weather tight closure at the jambs.
 - 2. Horizontal tracks
 - a. 2 inch 16-gauge minimum galvanized steel, reinforced with 13-gauge galvanized steel angles as required by door size and weight.
 - b. 3 inch 12-gauge minimum galvanized steel, reinforced with 11-gauge galvanized steel angles
 - 3. Provide standard lift track as indicated.
 - 4. Provide vertical lift track as indicated.
 - 5. Provide high lift track as indicated.
 - 6. Provide follow-the- roof-pitch tracks as indicated.
 - 7. Provide low headroom tracks as indicated.
- D. Spring Counterbalance: Torsion springs for door counter-balance mounted on a continuous cross header shaft. Springs to be oil tempered, helical wound and custom computed for each door. Cable drums to be die cast aluminum. Galvanized lift cable to provide minimum safety factor of five to one. Springs to comply with ANSI/DASMA 102-2011 as follows:
 - 1. Standard Cycle Spring: 10,000 cycles.
 - 2. High Cycle Spring: 25,000 cycles.
 - 3. High Cycle Spring: 50,000 cycles.
 - 4. High Cycle Spring: 100,000 cycles.
- E. Handle: Galvanized steel step plate/lift handle provided on inside and outside of bottom section.
- F. Lock:
 - 1. Standard interior sliding end stile lock with hole to receive padlock
 - 2. 5 pin cylinder lock interior lock bar and outside key.
- G. Weather stripping: Full length EPDM rubber bottom seal attached to bottom section.

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- H. Weather stripping: Perimeter seal for header and jambs.
- I. Mounting: Continuous reverse angle mounting for steel jambs.
- J. Mounting: Bracket mounting for wood jambs.
- K. Exhaust port: Installed in bottom sections. Connecting tube from vehicles by others.

2.3 INSULATED STEEL DOORS

- A. Amarr 2442 Commercial 2 inches (51 mm) polyurethane insulated door.
 - 1. Door Size: As indicated on the Drawings.
 - 2. Door Sections: 2 inches (51 mm) thick, sandwich construction consisting of rolled formed, commercial quality, flush 24 gauge exterior and ribbed 27 gauge interior steel skins, stucco embossed for added strength.
 - a. Door to have tongue and groove joint system with HMA thermal breaks combined with an EDPM seal between section joints.
 - b. Sections to be insulated with CFC free polyurethane foamed in place by means of a continuous process.
 - c. Tested door section R-value of 19.4 is tested in accordance with ASTM C 518-04.
 - d. Section U-value of 0.052.
 - e. End Stiles and steel at end hinge attachment reinforcement locations to be 14 Ga minimum combined thickness.
 - f. Interior skin of each section to have a continuous reinforcing strip, 20 gauge by 3-1/4 inches (83 mm) wide at top and bottom of section to provide for mounting of full sized hinges or hardware.
 - 3. Finish: Door exterior and interior pre-painted steel consisting of a hot dipped galvanized coating applied to the base metal, a 0.2 mil baked on prime coat and an 0.8 mil baked on polyester top coat.
 - a. Exterior Color: True White.
 - b. Exterior Color: Black
 - c. Exterior Color: Custom ColorZone color
 - 4. Air Infiltration:
 - a. Comply with ASHRAE® 90.1, IECC® and California Title 24® requirements for maximum U-factor of operable fenestrations with a 3rd party certified tested value of less than 0.37.
 - b. Comply with California Title 24® requirements for maximum air leakage for fenestration assemblies with a third-party certified tested value not exceeding 0.30 cfm/ft2
 - 5. Thermal Performance
 - a. Comply with ASHRAE® 90.1, IECC® and California Title 24® requirements for maximum U-factor of operable fenestrations with a 3rd party certified tested value of less than 0.37.
 - 6. Window Lites: 24 by 6 inches (610 by 152 mm) double insulated acrylic with Black Frame.
 - 7. Window Lites: 24 by 8 inches (610 by 203 mm) double insulated acrylic with Black Frame.
 - 8. Window Lites: 26 by 13 inches (635 by 330 mm) double insulated acrylic with Black Frame.
 - 9. Thermal Windows/Insulated Glass: 24 by 12 inches (610 by 305 mm) Molded plastic frame with insulated glass. Insulated glass unit to consist of two pieces of 1/8 inch (3.2 mm) thick clear glass with a 7/8 inch (22 mm) aluminum spacer.
 - a. White Frame
 - b. Black Frame

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10. Window Lites: 41 by 13 inches (1,041 by 330 mm) single polycarbonate with aluminum frame.
 - a. White Frame
 - b. Black Frame
11. Aluminum Fullview Door Sections:
 - a. Rails and stiles extruded from 6063-T6 aluminum
 - b. All stiles and rails to be secured with 5/16 inch (8 mm) diameter through rods.
 - c. Door Finish:
 - 1) All aluminum rails and stiles to be a Class 1 clear anodized finish.
 - 2) All aluminum rails and stiles to be a white powder coat finish.
 - d. Solid Panels: 0.050 inch (1.3 mm) aluminum panels sealed with glazing tape and an aluminum glazing bead.
 - e. Solid Insulated Panels: 1/2 inch (12.7 mm) overall insulated panel composed of 0.050 inch (1.3 mm) aluminum interior and exterior panels with an extruded polystyrene (EPS) core sealed with glazing tape and an aluminum glazing bead.
 - f. Glazed Panels: 1/8 inch (3.2 mm) DSB glass panels sealed with glazing tape and an aluminum glazing bead.
 - g. Glazed Panels: 1/8 inch (3.2 mm) Tempered glass panels sealed with glazing tape and an aluminum glazing bead.
 - h. Glazed Panels: 1/2 inch (12.7 mm) overall insulated double pane 1/8" (3.2 mm) DSB glass panels sealed with glazing tape and an aluminum glazing bead.
 - i. Glazed Panels: 1/2 inch (12.7 mm) overall insulated double pane 1/8" (3.2 mm) Tempered glass panels sealed with glazing tape and an aluminum glazing bead.
12. SuperFlex flexible impact sections.
 - a. Flexible impact bottom section up to 12'2" (3.7m) in lieu of the standard bottom section.
 - b. Flexible impact bottom and (1) flexible impact intermediate section up to 12'2" (3.7m) in lieu of the standard bottom section and standard intermediate section.
13. Operation
 - a. Manual Operation: Pull rope.
 - b. Manual Operation: Chain hoist.
 - c. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer. Operator shall meet UL325-2010 requirements for continuous monitoring of safety devices.
 - 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):
 - 3) Pneumatic Sensing Edge up to 22'
 - 4) Retro-Reflective photo sensor
 - 5) Operator Control Mounting:
 - (a) Flush Mount
 - (b) Surface Mount
 - 6) 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.
 - 7) Operator Control Location
 - (a) Interior location
 - (b) Exterior location

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- (c) Both interior and exterior location
- 8) 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

2.4 FABRICATION

- A. Insulated Steel Doors.
 - 1. Standard maximum width: Amarr 2442- 32 feet 2 inches (8.6m) width.
 - a. Galvanized struts (truss bars): Provide on all doors 16 feet 2 inches (4.9 m) and wider to prevent deflection of no more than 1/120 of the spanned width when in the open position.
 - 2. Standard maximum height: Amarr 2442- 24 feet 1 inch (7.3m) height.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare opening to permit correct installation of door unit to perimeter air and vapor barrier seal.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions. Doors to be interior face mounted on a prepared surface.
- B. Anchor assembly to wall construction and building framing without distortion.
- C. Securely brace door tracks suspended from structure. Secure tracks to structural members or solid backing only.
- D. Fit and align door assembly, tracks and operating hardware.
- E. Install perimeter weatherstripping.
- F. Adjust door assembly to smooth operation and in full contact with weatherstripping.

3.4 CLEANING

- A. Clean doors, frames and glass.
- B. Remove labels and visible markings.

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3.5 PROTECTION

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

END OF SECTION