

SECTION 08360

SECTIONAL OVERHEAD DOORS



PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Insulated Steel Doors
- B. Aluminum Doors
- C. Track and Framing
- D. 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 108-2017 – Standard Method for Testing Sectional Garage Doors, Rolling Doors and Flexible Doors: Determination of Structural Performance Under Uniform Static Air Pressure Difference

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- E. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
- F. ASCE/SEI 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures
- G. DASMA 112 - Test Method for Air Leakage of Sectional Garage Doors, Rolling Doors, and High-Performance Doors
- H. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
- I. ANSI/DASMA 105 - Test Method for Thermal Transmittance and Air Infiltration of Garage Doors and Rolling Doors
- J. ANSI/DASMA 102 - Specifications for Sectional Overhead-Type Doors.

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.

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. Design pressure of _____ lb/sq ft (_____ kPa)

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

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- 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.

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.
- 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 (4978 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. Track Lift Types
 - a. Provide standard lift track as indicated.
 - b. Provide vertical lift track as indicated.
 - 1) Provide standard vertical lift track as indicated.
 - 2) Provide Rapid Install Vertical Lift Track with TrackLock installation and safety system.
 - c. Provide high lift track as indicated.
 - d. Provide follow-the- roof-pitch tracks as indicated.
 - e. Provide low headroom tracks as indicated
 - 2. Vertical Track for standard lift, vertical lift, high lift, follow-the-roof-pitch, or low headroom track options as indicated.
 - a. RA2 clip style reverse continuous angle, 2 inch vertical track 17 or 19-gauge minimum galvanized steel, inclined using adjustable track clips attached to reversed continuous wall angle to assure weather tight closure at the jambs. *(Standard 2" track option for use with steel jambs)*
 - b. CA2 clip style continuous angle, 2 inch vertical track 17 or 19-gauge minimum galvanized steel, inclined using adjustable track clips attached to continuous wall angle to assure weather tight closure at the jambs. *(2" track option for use with wood or masonry jambs)*

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- c. BM2 bracket mount with 2 inch vertical track 17 or 19-gauge minimum galvanized steel, inclined using adjustable jamb brackets to assure weather tight closure at the jambs (*2" track option for use with wood jambs*)
 - d. RB2 reverse continuous angle with offset jamb brackets, 2 inch vertical track 17 or 19-gauge minimum galvanized steel, inclined using 12-ga minimum offset jamb brackets attached to reversed continuous angle to assure weather tight closure at the jambs. (*2" track option for use with wood or masonry jambs utilizing reverse angle jamb seal*)
 - e. TR3 tapered reverse continuous angle, 3 inch vertical track 12-gauge minimum galvanized steel inclined using adjustable tapered reverse continuous angle to assure a weather tight closure at the jambs (*Standard 3 inch track option for use with steel jambs*)
 - f. TC3 continuous tapered angle, 3 inch vertical track 12-gauge minimum galvanized steel inclined using adjustable tapered angle to assure a weather tight closure at the jambs (*3" track option often used with wood or masonry jambs*)
 - g. RA3 clip style reverse continuous angle, 3 inch vertical track 12-gauge minimum galvanized steel inclined using adjustable track clips attached to reversed continuous wall angle (*3 inch track option for use with steel jambs*)
 - h. CA3 clip style continuous angle, 3 inch vertical track 12-gauge minimum galvanized steel inclined using adjustable track clips attached to reversed continuous wall angle to assure a weather tight closure at the jambs. (*3 inch track option- often used with wood or masonry jambs*)
 - i. RB3 reverse continuous angle with offset jamb brackets, 3 inch vertical track 12-gauge minimum galvanized steel inclined using 12-ga minimum offset jamb brackets attached to reversed continuous angle to assure weather tight closure at the jambs. (*3 inch track option for use with wood or masonry jambs utilizing reverse angle jamb seal*)
3. Horizontal track for standard lift, high lift, follow-the-roof-pitch, or low headroom track options as indicated.
- 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
- 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 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: 3-1/2 inches (90 mm) U-shaped vinyl bottom seal in a full-length thermally neutral impact resistant PVC retainer.
- H. Weather stripping: Perimeter seal for header and jambs.

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- I. Exhaust port: Installed in bottom sections. Connecting tube from vehicles by others.

2.3 INSULATED STEEL DOORS

- A. Amarr 2432 (formerly Model 1000) Commercial 2 inch (51mm) polystyrene insulated door.
1. Door Size: As indicated on the Drawings.
 2. Door Sections: 2 inch (51 mm) thick, sandwich construction consisting of rolled formed, commercial quality, 24 gauge stucco embossed exterior steel skin with ribbed profile for added strength.
 - a. Door exterior and interior steel skins to be laminated to an expanded polystyrene (EPS) foam core with a polyurethane adhesive.
 - b. Sections to be insulated with CFC, HFC & HCFC free EPS foam core.
 - 1) EPS foam to have zero Ozone Depletion Potential (ODP) and zero Global Warming Potential (GWP).
 - c. Calculated section R-value of 9.4.
 - d. Section U-value of 0.106.
 - e. Section joint to form weather tight tongue and groove joint.
 - 1) Attach Polypropylene Wear-Seal between each tongue and groove joint to reduce noise, reduce normal wear and tear on sections and form a second thermal break
 - f. End Stiles to be 20 gauge galvanized steel.
 - g. Hinge Attachment Reinforcement:
 - 1) Provide 18 gauge galvanized primed steel support plates 2-5/8 by 4-3/8 inches (67 by 111 mm) located under each hinge location, pre-punched for hinge attachment.
 3. Finish: Door exterior and interior coil-coated steel featuring ASTM A653 hot-dipped galvanized substrate, precision-treated for optimal adhesion of the baked-on primer and exterior finish coat of a durable baked-on polyester enamel topcoat.
 - a. Exterior Color: True White.
 - b. Exterior Color: Black
 - c. Exterior Color: Commercial Brown.
 - d. Exterior Color: Sandtone
 - e. Exterior Color: Commercial Gray
 - f. Exterior Color: ColorZone custom color as selected
 4. Air Infiltration:
 - a. Comply with ASHRAE® 90.1 and IECC® requirements for maximum air leakage for fenestration assemblies with a third-party certified tested value of less than 0.40 cfm/ft2.
 - 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:
 - a. 24 by 6 inches (610 by 152 mm) insulated acrylic glazing in a screw together injection molded frame, black color.
 - b. 24 by 12 inches (610 by 305 mm) clear tempered insulated glass in a screw together injection molded frame.
 - 1) White frame standard on True White color door
 - 2) Black frame standard on all colors other than True White
 7. SuperFlex flexible impact sections.
 - a. Flexible impact bottom section up to 12'2" (3.7m) in lieu of the standard bottom section.

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- 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.
- 8. 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
 - (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 2432 (formerly Model 1000) up to 24 feet 2 inches width (7.4m).
 - a. Galvanized struts (truss bars): Provide on all doors 14 feet 2 inches (4.3m) 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 2432 (formerly Model 1000) up to 24 feet 1 inch height (7.3m).

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.

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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.

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