

**SECTION 08 11 00
METAL DOORS AND FRAMES**

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The work under this section to include the furnishing of all items shown on the drawings and as specified, including, but not limited to, the following.
 - 1. Steel Doors
 - 2. Steel Door Frames

1.2 RELATED SECTIONS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 specification sections, apply to work in this section.
- B. Section 04 05 13: Masonry Mortar and Grout
- C. Section 08 14 00: Wood Doors
- D. Section 08 71 00: Door Hardware
- E. Section 08 80 00: Glazing
- F. Section 09 90 00: Painting

1.3 REFERENCES

- A. ANSI A115.1 – Preparation for Mortise Locks for 1-3/8 & 1-3/4 in Standard Steel Doors and Frames
- B. ANSI A115.2 – Preparation for Bored Locks for 1-3/8 & 1-3/4 Doors
- C. ANSI A117.1 - Accessible and Usable Buildings and Facilities
- D. ANSI/SDI A250.3 – Test Procedure and Acceptance Criteria for Factory Applied Finish Painted Steel Surfaces for Steel Doors and Frames
- E. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frame Anchors and Hardware Reinforcing
- F. ANSI/SDI A250.10 – Test procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames
- G. ANSI/SDI A250.11 – Recommended Erection Instructions for Steel Frames
- H. ASCE 7 – Minimum Design Loads for Buildings and other Structures
- I. ASTM A568/A568M – Standard Specification for Steel, Sheet, Carbon, Structural, and High Strength, Low Alloy, Hot Rolled and Cold Rolled, General Requirements for
- J. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
- K. ASTM C1363 – Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus
- L. ASTM E413 - Classification for Rating Sound Insulation
- M. DHI (Door Hardware Institute) - Installation Guide for Doors and Hardware
- N. NFPA 80 - Fire Doors and Other Opening Protectives
- O. NFPA 252 – Standard Methods of Tests of Door Assemblies
- P. FBC - Florida Building Code
- Q. SDI-100 – Recommended Specifications for Standard Steel Doors and Frames
- R. UL 10B - Fire Tests of Door Assemblies

1.4 QUALITY ASSURANCE

- A. Conform to requirements of SDI-100.
- B. Manufacturer: Company specializing in manufacturing the products specified in this section

with a minimum of 3-years documented experience.

- C. All exterior Door/Frame Assemblies shall meet current FBC Product Approval System requirements.
 - D. Coordinate hardware requirements with the District's card-reader system requirements.
- 1.5 SHOP DRAWINGS AND PRODUCT DATA
- A. Submit shop drawings, product data, manufacturer's literature, and installation instructions.
 - 1. Include details of each frame type, elevations of door design types, conditions at openings details of construction, location, and installation requirements of finish hardware and reinforcements and details of joints and connections.
 - B. Indicate door and frame configuration, anchor spacing, anchor types, location of cutouts for hardware and glazing, and internal reinforcement.
 - C. Provide hollow metal doors and frame assemblies that comply with performance requirements as demonstrated by testing manufacturer's assemblies in accordance with ASCE 7.
- 1.6 DELIVERY, STORAGE, AND PROTECTION
- A. Deliver doors and frames marked to identify doors with frames with openings.
 - B. Store doors and frame in a dry area on end with spacers between units to allow ventilation.
 - C. Ship and store frames with temporary stiffeners and spacers in place to prevent distortion.
- 1.7 WARRANTY
- A. Provide minimum 5-year manufacturer's warranty under provisions of Section 01 77 00.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. SDI or NAAMM members conforming to the requirements of this specification

2.2 STEEL DOORS

- A. Material: Commercial quality carbon steel conforming to ASTM A568/A568, hot-dipped A60 Galvannealed steel conforming to ASTM A653/A653M or hot dipped G90 galvanized steel.
 - 1. Steel doors with less than 50% glass shall be Level 3 Model 2 by 1¾" thick full flush seamless construction.
 - 2. Steel doors with more than 50% glass shall be Level 3 Model 3 by 1¾" thick stile and rail construction.
 - 3. Reinforcements shall be of the same material as door.
 - a. Hinge reinforcements shall be no less than 7-gauge for 1¾" door.
 - b. Closer reinforcement shall be no less than 14-gauge box minimum 6" high x 20" long.
 - c. Lock reinforcement shall be 16-gauge.
 - 4. Door cores:
 - a. Exterior doors shall be fully filled with one-piece foam plastic or fiberglass insulation securely bonded to both face sheets, minimum R-7.
 - b. Interior doors shall be a one-piece honeycombed core securely bonded to both face sheets.
- B. Fire Rated:
 - 1. Provide fire rated assembly where scheduled or required by Code.
 - 2. All installations shall be in accordance with the requirements of NFPA 80.

2.3 STEEL FRAMES

- A. Flush frame construction of hot-dipped A60 Galvannealed steel conforming to ASTM A653/A653M or hot dipped G90 galvanized steel.

1. Exterior frames: 14 gauge material masonry/flush.
2. Interior frames 16 gauge material drywall on frame wall, masonry on concrete or block wall.
3. Assemble so that the face miter seam is "closed and tight".
 - a. Weld the face seam and the full web of the frame corner or intersection.
 - b. Grind and dress smooth the weld area.
 - c. Apply a zinc rich primer over the grinding area, and finish with a matching prime paint.
4. Factory prepare for field installation of silencers
5. Provide 7-gauge universal steel hinge reinforcement and prepare for 4½" x 4½" standard or heavy weight template hinges.
6. Strikes reinforcing 16-gauge prepped for ANSI A115.1 or ANSI A115.2 strike.
7. Strike jambs 14-gauge reinforcement

2.4 ACCESSORIES

- A. Door Silencers: Except on weather-stripped frames, drill stops to receive three silencers on strike jambs of single frames and two silencers on heads of double frames.
- B. Jamb Anchors:
 1. Provide a minimum of four anchors on both the hinge and latch jambs.
 2. Provide 14-gauge galvanized sheet steel, angle anchors welded for each jamb, which extends to the floor, punched for a minimum of two ¼" bolts.
- C. Spreader: Provide frames with temporary steel spreader bars tack welded to jamb bottoms to maintain full rigidity and proper alignment during installation.
- D. Astragals: Provide steel astragals (removable) as scheduled.

2.5 PROTECTIVE COATINGS

- A. Frames: Provide full immersion dip coat of rust-inhibitive metal primer reaching all surfaces in accordance with ANSI/SDI A250.10.
- B. Doors: Fill in all groves and seams on top of door prior to painting, and provide full coverage electrostatic spray coat of rust-inhibitive metal primer.
- C. Dry the protective coating of all frames and doors in a baking oven process.
- D. Bituminous Coating: Coat the inside of frame profile with bituminous coating to a minimum thickness of 1/16" for exterior openings and interior openings in wet locations.

2.6 FABRICATION

- A. General design and construction
 1. Provide welded steel frames for doors, transoms, sidelight, borrowed light, and other openings to the size and design as shown on the architectural drawings.
 2. All finished work shall be strong and rigid, neat in appearance square, true, and free of defects.
 3. Provide jamb depths, trim, profile, and backbends as scheduled and shown on approved shop drawings.
 4. When shipping limitations so dictate, fabricate frames for large openings in sections designed for splicing or splining in the field by others.
 5. Hardware reinforcements are to be in accordance with the minimum standard gages as listed in SDI-100.
 6. Mortised, reinforce, drill, and tap frames at the factory only for template mortised hardware, in accordance with approved hardware schedule and the hardware contractor template.

- a. Where surface mounted hardware is applied, frames to have reinforcing plates only, drilling and tapping by others.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Examine new and existing adjacent framing and rough opening preparation for conditions, which would prevent quality installation of doors and frames.
- B. Install frames in accordance with ANSI/SDI A250.11 and ASCE 7.
- C. Install doors in accordance with DHI A115.1G.
- D. Install fire rated frames in accordance with NFPA 80.
- E. Install all doors to meet accessibility requirements.
- F. Coordinate with masonry wall construction for anchor placement.
- G. Install roll-formed-steel reinforcement channels between two abutting frames.
 1. Anchor to structure and floor.
- H. Fully grout exterior hollow metal frames, and hollow metal frames in masonry and concrete walls with non-shrink grout.
- I. Install with no spaces between the frame and the structure to prevent water or pest from entering the building.
 1. Install sealant to maintain watertight seal.
- J. Recess all doorframes opening to the exterior of the building a minimum of one-inch from the exterior surface of the adjoining wall.
 1. Maintain the proper swing and opening capacity to meet the code requirements.

3.2 TOLERANCES

- A. Maximum Diagonal Distortion: $\frac{1}{16}$ " measured with straight edge, corner to corner.

3.3 ADJUSTING AND CLEANING

- A. Adjust for smooth and balanced door movement.
- B. Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.

END OF SECTION