

SECTION 08110
METAL DOORS AND FRAMES

1 PART 1 GENERAL

1.1 DESCRIPTION

- A. Work included: Provide metal doors, and metal door and window frames, which are not specifically described in other Sections of these Specifications, where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. Hardware - see Section 08700
 - 3. Painting - see Section 09900

1.2 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Unless specifically otherwise approved by the Architect, provide all products of this Section from a single manufacturer.
- C. Perform Work in accordance with the following:
 - 1. ANSI 250.8 – Recommended Specifications for Standard Steel Doors and Frames.
 - 2. DHI – Door Hardware Institute – The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builders Hardware.
 - 3. Fire Rated Doors and Frames:
 - a. Product Construction: NFPA 252.
 - b. Product Installation: NFPA 80.

1.3 SUBMITTALS

- A. Comply with pertinent provisions of Section 01001.
- B. Product Data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Materials list of items proposed to be provided under this Section.
 - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

3. Shop Drawings showing details of each frame type, elevations of door designs, details of openings, and details of construction, installation and anchorage.
4. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.

2 PART 2 PRODUCTS

2.1 GENERAL

- A. Provide hollow metal doors and frames manufactured by a single firm specializing in the production of this type of work.
- B. Provide doors and frames complying with the Steel Door Institute "Recommended Specifications for Standard Steel Doors and Frames": (SDI 100), and as herein specified.
- C. Manufacturers offering products to comply with the requirements for hollow metal doors and frames include the following:
 1. Amweld Building products Division, American Welding and Manufacturing Co.
 2. Ceco Corporation
 3. Curries Company
 4. Pioneer
 5. Republic Builders Products Company

2.2 FIRE RATED ASSEMBLIES

- A. Wherever a fire-resistance classification (3 hour, 1-1/2 hour, etc., or "A", "B", etc.) is shown or scheduled for hollow metal doors, provide fire rated hollow metal doors and frames that have been investigated and tested as a fire door assembly, complete with type of fire door hardware to be used in the work. Identify each fire door and frame with UL labels, indicating the applicable fire rating of both door and frame.
- B. Fabricate and install assemblies to comply with NFPA Standard No. 80, and as herein specified.

2.3 MATERIALS

- A. Hot Rolled Steel Sheets and Strips
 1. Commercial quality carbon steel, pickled and oiled, complying with ASTM A 569 and ASTM A 568.
- B. Cold Rolled Steel Sheets:
 1. Commercial quality carbon steel type E, matte-finish complying with ASTM A 366 and ASTM A 568.

- C. Hot-dip Galvanized Steel Sheets
 - 1. Zinc-coated carbon steel sheets of commercial quality complying with ASTM A 526, with 1.25 oz "Commercial" zinc coating, mill-phosphatized, complying with ASTM A 525.
 - D. Supports and Anchors
 - 1. Provide units galvanized after fabrication, where built into exterior walls, complying with ASTM A 153, Class B.
 - E. Inserts, Bolts, and Fasteners
 - 1. Provide manufacturer's standard units, except hot-dip galvanize all items to be built into exterior walls, complying with ASTM A 153.
 - F. Shop-Applied Paint
 - 1. Provide manufacturer's standard shop-applied baked-on prime-coat paint to all metal surfaces.
 - 2. Primer for galvanized surfaces: Provide a zinc-duct/ zinc-oxide prime paint, complying with FS-TT P 641 (Type II).
- 2.4 METAL DOORS
- A. Provide hollow metal doors of the types and styles indicated on the Drawings or Schedules and complying with SDI 100-98 for minimum materials and construction requirements.
 - B. Exterior and Interior Doors: Level 3, Extra Heavy Duty, Model 1, Full Flush, 1-3/4" thick, insulated, minimum 16 gauge steel (galvanized at exterior doors).
 - C. End Closure: Channel, 0.04 inch thick, flush.
 - C. Thermal Insulated Doors (Exterior): Total insulation R-Value of 7, measured in accordance with ASTM C 1363.
 - E. Door Louvers: Roll formed steel; Inverted V blade, sight proof; size as indicated, prime painted.
- 2.5 METAL FRAMES
- A. Provide metal frames for doors and other openings as shown on the Drawings and Schedules. Conceal all fastenings unless otherwise shown. Countersink exposed screws using Phillips flat head screws.
 - B. Door Frames: Level 3, nominal 16 gauge sheet steel (14 gauge galvanized steel at exterior door frames). Frames shall be combination type with integral stop. Reinforce each miter joint internally with 18 gauge channel shaped reinforcements. Equip frames with one welded-in floor anchor in each jamb. Provide three field inserted steel lock-in anchors (maximum of 24" oc.) at each jamb. Anchor to construction involved (i.e. wood frame, masonry, concrete or steel stud). Fabricate all frames to fit surrounding wall construction snugly; no plastic, vinyl, or other fillers will be accepted.

1. Frames for Masonry Openings: Provide self-aligning tabs and slots for secure locking and miter and continuously arc-weld on the frame face (spot weld at corners) to form a one-piece neat mitered corner assembly.
2. Frames for Drywall Openings: Provide for installation after the wall is erected. Supply head frame with an oval countersunk head sheet metal screw, located out of view, for securing the header and jambs. Provide headers and jambs with mating tabs and slots for alignment of the assembly. Provide neat mitered joints at all corners. Provide two welded-in steel stiffeners at each jamb member to maintain a tight grip on the wall and equip with welded-in sill anchors.
- C. Rubber Door Silencers: Drill stops to receive 3 silencers on strike jambs of single-swing frames and 4 silencers on heads of double-swing frames. Install plastic plugs to keep holes clear during construction.
- D. Plaster Guards: Provide 22 gauge steel plaster guards or mortar boxes welded to the frame, at the back of all finish hardware cutouts where mortar or other materials might obstruct hardware operation.

3 PART 3 EXECUTION

3.1 GENERAL

- A. Fabricate hollow metal units to be rigid, neat in appearance and free from defects, accurately formed to the required sizes and profiles. Wherever practicable, fit and assemble units in the manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment to assure proper assembly at the project site. Dress all welded joints on exposed surfaces flush and smooth, to be invisible when prime painted. Use of metallic filler to conceal manufacturing defects is not acceptable.

3.2 FINISH HARDWARE PREPARATION

- A. Prepare hollow metal units at the manufacturer's plant to receive mortised and concealed finish hardware, including cutouts, reinforcing, drilling, and tapping. Comply with applicable requirements of ANSI A-15 "Specifications for Door and Frame Preparation". Prepare for other mortised and concealed finish hardware to the templates of the manufacturer of each finish hardware item required in the work.
- B. Reinforce hollow metal units at the manufacturer's plant to receive surface-applied hardware. Drill and tap for surface applied finish hardware at the project site during installation.

3.3 MOLDING LOCATIONS

- A. Provide moldings around solid, glazed or louvered panels in hollow metal units for a rigid and secure installation.
- B. Provide non-removable molding on the outside of exterior hollow metal units and the corridor side of interior hollow metal units.
- C. Provide removable moldings at other locations, unless otherwise shown.

3.4 PLACING FRAMES

- A. Place frames prior to the construction of masonry enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.
- B. Install fire-rated frames in accordance with NFPA Standard No. 80.
- C. In drywall metal stud partitions, follow manufacturer's recommendations for installation of frames.

3.5 FINISH HARDWARE INSTALLATION

- A. Finish hardware installation is specified under Section 08700.

3.6 CLEARANCES

- A. Fire rated doors shall be manufactured and installed with clearances as specified by NFPA Standard No. 80.
- B. All doors shall be manufactured and installed with clearances specified by SDI 100.

3.7 ADJUST AND CLEAN

- A. Final Adjustments:
 - 1. Check and readjust operating finish hardware items in hollow metal work just prior to final inspection.
 - 2. Leave work in complete and proper operating condition.
 - 3. Remove defective work and replace with work complying with the specified requirements.
- B. Immediately after erection, sand smooth all rusted and damaged areas of prime coat, and apply touchup of compatible air-drying primer.

...END OF SECTION 08110