

SECTION 08110
STEEL DOOR FRAMES

PART 1 - GENERAL

1.01 PROVISIONS INCLUDED

- A. The general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 General Requirements, apply to work specified in this Section.

1.02 SUMMARY

- A. Work includes hollow metal frames and mullions for doors, sidelights, and interior fixed windows.
- B. Related Work Specified in Other Sections:
 - 1. Door Schedule: Section 08000.
 - 2. Wood doors: Section 08210.
 - 3. Steel access doors: Section 08310.
 - 4. Door hardware: Section 08710.
 - 5. Glass and glazing into hollow metal frames: Section 08800.
 - 6. Painting primed frames: Section 09900.

1.03 REFERENCE STANDARDS

- A. American National Standards Institute (ANSI)/Door and Hardware Institute (DHI):
 - 1. ANSI/DHI A115 Series, preparation for bolts, closers, latches, locks, in steel frames.
 - 2. ANSI/DHI A115.IG, "Installation Guide for Doors and Hardware."
 - 3. ANSI A250.8, "Recommended Specifications for Standard Steel Doors and Frames."
- B. Steel Door Institute (SDI)
 - 1. SDI-105, "Recommended Erection Instructions for Steel Frames."
 - 2. SDI-111 Series, "Recommended Details, Steel Doors and Frames."
 - 3. SDI-117, "Manufacturing Tolerances for Standard Steel Doors and Frames."
 - 4. SDI-122, "Installation and Trouble-Shooting Guide for Standard Steel Doors and Frames."

1.04 SUBMITTALS

- A. Product Data: Submit, for each type of frame, manufacturer's illustrated literature, including details of construction, materials, dimensions, hardware preparation, core, profiles, and finishes.
- B. Shop Drawings: Show fabrication and installation of steel frames. Include details, elevations, conditions at openings, details of construction, location and installation requirements of door hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.

1. Note glass thickness and setting method to confirm that glazing frames and stops have been coordinated with glass and glazing requirements.

C. Door Schedule: Use same reference designations indicated on Drawings in preparing schedule for doors and frames.

1.05 QUALITY ASSURANCE

A. Source Limitations: Provide hollow metal frames manufactured by a single firm specializing in the production of this type of work, unless otherwise acceptable to the Architect.

B. Steel Door and Frame Standard: Comply with ANSI A250.8, unless more stringent requirements are indicated.

C. Steel Sheet Thicknesses: Thickness dimensions, including those referenced in ANSI A250.8, are minimums as defined in referenced ASTM standards for both uncoated steel sheet and the uncoated base metal of metallic-coated steel sheets.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal frames cardboard-wrapped or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory-finished frames.

B. Inspect frames upon delivery for damage and notify shipper and supplier if damage is found. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to Architect. Remove and replace damaged items that cannot be repaired as directed.

C. Store frames at building site under cover. Place units on minimum 4-inches high wood blocking. Avoid use of non-vented plastic or canvas shelters which could create humidity chamber.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide standard steel frames by one of the following:

1. Amweld Building Products
2. Ceco Corp.
3. Curries Company.
4. Republic Builders Products.
5. Steelcraft Manufacturing Co.

2.02 MATERIALS

A. Hot-Rolled Steel Sheets: ASTM A 569/A 569M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

- B. Cold-Rolled Steel Sheets: ASTM A 366/A 366M, Commercial Steel (CS), or ASTM A 620/A 620M, Drawing Steel (DS), Type B; stretcher-leveled standard of flatness.

2.03 PRESSED METAL FRAMES

- A. General: Provide steel frames for wood doors, sidelights and fixed glazing that comply with ANSI A250.8 and with details indicated for type and profile. Conceal fastenings, unless otherwise indicated. For exposed fasteners, provide countersunk flat head screws and bolts.
- B. Interior Welded Frames: Fabricate frames from cold-rolled steel, with corners mitered or coped and continuously welded, and with seamless face joints.
 - 1. Fabricate frames for wood doors from 0.053-inch thick cold-rolled steel.
- C. Silencers: Drill stops to receive 3 silencers on strike jambs of single-door frames and 2 silencers on heads of double-door frames.
- D. Plaster Guards: Provide 0.016-inch-thick, steel sheet plaster guards or mortar boxes to close off interior of openings; place at back of hardware cutouts where mortar or other materials might obstruct hardware operation.
- E. Supports and Anchors: Fabricated from not less than 0.042-inch-thick, electrolytic zinc-coated or metallic-coated steel sheet.
- F. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where zinc-coated items are to be built into exterior walls, comply with ASTM A 153/A 153M, Class C or D as applicable.

2.04 FABRICATION

- A. Fabricate steel door frame units to comply with ANSI A250.8 and to be rigid, neat in appearance and free from defects including warp or buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at project site.
- B. Clearances: Specified in Section 08210.
- C. Tolerances: Comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames."
- D. Fabricate concealed stiffeners, reinforcement and moldings from either cold- or hot-rolled steel.
- E. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.
- F. Frame Construction: Fabricate frames to shapes and sizes shown, with corners shop welded.
 - 1. Provide welded frames with temporary spreader bars.

- G. Finish Hardware, General: Locate hardware as indicated on final shop drawings or, if not indicated, in accordance with DHI "Recommended Locations for Builder's Hardware on Standard Steel Doors and Frames" and ANSI A205.8.
- H. Hardware Preparation: Prepare hollow metal frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements in ANSI A250.6 and ANSI A115 Series specifications for door and frame preparation for hardware.
 - 1. Reinforce frames at finish hardware locations with steel reinforcing plates complying with ANSI A205.8-1998 for minimum thicknesses and dimensions.
 - a. Hinges: 0.123 inch (12 MSG)
 - b. Lock Face, Flush and Surface Bolts: 0.067 inch (14 MSG)
 - c. Surface-Applied Closers, Hold-Open Arms, and Exit Devices: 0.067 inch (14 MSG)
 - d. Pull Plates and Bars: 0.053 inch (16 MSG) on door only.
 - e. Floor checking hinges and pivot hinges: 0.167 inch (7 MSG)
 - f. Other Surface-Mounted Hardware: 0.053 inch (16 MSG).
- I. Reinforce door frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.
- J. Glazing Stops: Manufacturer's standard, formed from 0.032-inch-thick steel sheet.
 - 1. Provide nonremovable glazing stops on secure side of interior door openings; provide screw-applied, removable glazing stops on inside/non-secure side.
 - 2. Drill stops and frame to receive countersunk flat-head machine screws spaced uniformly not more than 12 inches on center. Furnish flat head machine screws of appropriate size for fastening stops to frame.

2.05 FINISHES

- A. Shop Painting, General: Clean, treat, and paint exposed surfaces of hollow metal frame units, including galvanized surfaces.
- B. Preparation: Clean steel surfaces to remove mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.
- C. Prime Finish: Manufacturer's standard, factory-applied coat of rust-inhibiting primer complying with ANSI A250.10 for acceptance criteria.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General: Install hollow metal frames, and accessories in accordance with final shop drawings, manufacturer's installation instructions, and these specifications.

- B. Placing Frames: Comply with provisions of SDI-105 unless otherwise indicated. 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.
 - 1. Place frames prior to construction of enclosing walls and ceilings.
 - 2. In metal stud partitions, provide at least three wall anchors per jamb; install wall anchors adjacent to location on hinge jamb and at corresponding heights on strike jamb, and fasten to the studs with screws.

3.02 ADJUSTING AND CLEANING

- A. Prime Coat Touch-up: Immediately after installation, sand smooth rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.
- B. Final Adjustments: As specified in Section 08210.
- C. Just prior to the inspection at the time of Substantial Completion, clean frames.

END OF SECTION 08110