

SECTION 08 11 13 – HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Summary: Section includes furnishing and installing:
 - 1. Hollow metal doors.
 - 2. Hollow metal frames.

1.3 RELATED WORK

- A. Related Work of Other Sections:
 - 1. Division 07 Section – Joint Sealants.
 - 2. Division 08 Section – Wood Doors.
 - 3. Division 08 Section – Door Hardware.
 - 4. Division 09 Section – Gypsum Board Assemblies.
 - 5. Division 09 Section – Painting and Coating.

1.4 SUBMITTALS

- A. Product Data: For each type of door and frame indicated, include door designation, type, level and model, material description, core description, construction details, label compliance, sound and fire-resistance ratings, and finishes.
- B. Shop Drawings: Show the following:
 - 1. Elevations of each door design.
 - 2. Details of doors including vertical and horizontal edge details.
 - 3. Frame details for each frame type including dimensioned profiles.
 - 4. Details and locations of reinforcement and preparations for hardware.
 - 5. Details of each different wall opening condition.
 - 6. Details of anchorages, accessories, joints, and connections.
 - 7. Coordination of glazing frames and stops with glass and glazing requirements.
- C. Door Schedule: Use same reference designations indicated on Drawings in preparing schedule for doors and frames.

1.5 QUALITY ASSURANCE

- A. Steel Door and Frame Standard: Comply with ANSI A 250.8, unless more stringent requirements are indicated.
- B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 252.

1. Test Pressure: Test at positive pressure in accordance with UBC Standard 7-2.
2. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a testing agency acceptable to authorities having jurisdiction that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.
3. Temperature-Rise Rating: Where indicated, provide doors that have a temperature-rise rating of 450 deg F maximum in 30 minutes of fire exposure.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver doors and frames cardboard-wrapped or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory-finished doors and frames.
- B. Inspect doors and frames on delivery for damage, and notify shipper and supplier if damage is found. Minor damages may be repaired provided refinished items match new work and are acceptable to Architect. Remove and replace damaged items that cannot be repaired as directed.
- C. Store doors and frames at building site under cover. Place units on minimum 4-inch- high wood blocking. Avoid using non-vented plastic or canvas shelters that could create a humidity chamber. If door packaging becomes wet, remove cartons immediately. Provide minimum 1/4-inch spaces between stacked doors to permit air circulation.

1.7 SEQUENCING AND SCHEDULING

- A. Submit data and schedule at earliest possible date, particularly where acceptance of schedule must precede fabrication of units that must be built into other work. Coordinate door and frame work with door hardware specified in Division 08 Section – Door Hardware.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with Project requirements, provide hollow metal door and frame units produced by one of the following:
 1. Amweld Building Products, Inc. (330) 527-4385.
 2. Curries Co. (515) 423-1334.
 3. Deansteel Manufacturing Co. (210) 226-8271
 4. The Kewanee Corp. (800) 666-4481.
 5. Mesker Door Co. (205) 851-6670.
 6. Premier Products, Inc. (318) 361-0796.
 7. Republic Builders Products (901) 352-3383.

2.2 MATERIALS

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

- C. 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.
- D. Anchors and Accessories: Manufacturer's standard units suitable for type of wall construction, and as follows.
 - 1. Provide square profile stops with mitered corners for glazing and louvers.
 - 2. Use galvanized items for units built into exterior walls.
 - 3. Provide countersunk flat or small oval head Philips or Jackson head fasteners where exposed to view.
- E. Primer: Manufacturer's standard rust-inhibitive primer, suitable as a base for specified finish paints.

2.3 DOORS AND FRAMES

- A. General: Provide doors of sizes, thicknesses, and designs indicated.
- B. Provide the following doors and frames complying with ANSI/SDI A250.8 "Recommended Specifications for Standard Steel Doors and Frames," and as specified.
 - 1. Exterior Doors: Level 3 and Physical Performance Level A for Extra Heavy Duty, Model 2 doors, "Seamless Design," fabricated with minimum 0.053" thick (old 16 gage) hot-dip galvanized steel faces and edges, insulated "Steel Stiffened Core," with top and bottom flush end closures sealed to eliminate moisture entry into door, and with closer reinforcement.
 - 2. Interior Doors: Level 2 and Physical Performance Level B for Heavy Duty, Model 2 doors, "Seamless Design" fabricated from minimum 0.042" thick (old 18 gage) steel faces, with "Steel Stiffened Core" and with closer reinforcement.
 - 3. Exterior Frames: Level 3 and Physical Performance Level A for Extra Heavy Duty frames, fabricated from minimum 0.053" thick (old 16 gage) hot-dip galvanized steel with mitered and continuously seam welded (including rabbets and stop) corners, and with temporary spreader bar at bottom.
 - 4. Interior Frames: Level 2 and Physical Performance Level B for Heavy Duty frames, fabricated from minimum 0.042" thick (old 18 gage) steel sheet with mitered and continuously seam welded (including rabbets and stop) corners, and with temporary spreader bar at bottom.

2.4 FABRICATION

- A. General: Fabricate hollow metal door and frame units to comply with ANSI A250.8 and to be rigid, neat in appearance, and free from defects including warp and 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. Exterior Door Construction: For exterior locations and elsewhere as indicated, fabricate doors, panels, and frames from metallic-coated steel sheet. Close top and bottom edges of doors flush as an integral part of door construction or by addition of 0.053-inch-thick (old 16 gage), metallic-coated steel channels with channel webs placed even with top and bottom edges.
- C. Interior Door and Panel Faces: Fabricate exposed faces of doors and panels, including stiles and rails of non-flush units, from the following material:
 - 1. Cold-rolled steel sheet.

- D. Core Construction: Manufacturer's standard core construction of the type specified that produces a door complying with SDI standards.
- E. Clearances for Non-Fire-Rated Doors: Not more than 1/8 inch at jambs and heads, except not more than 1/4 inch between pairs of doors. Not more than 3/4 inch at bottom.
- F. Clearances for Fire-Rated Doors: As required by NFPA 80.
- G. Single Acting, Door-Edge Profile: Square edge, unless beveled edge is indicated.
- H. Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."
- I. Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold- or hot-rolled steel sheet.
- J. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.
- K. Hardware Preparation: Prepare doors and 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. For concealed overhead door closers, provide space, cutouts, reinforcement, and provisions for fastening in top rail of doors or head of frames, as applicable.
- L. Frame Construction: Fabricate frames to shape shown.
 - 1. For exterior applications, fabricate frames with mitered or coped and continuously welded corners, rabbets, stops, and seamless face joints.
 - 2. For interior applications, fabricate frames with mitered or coped and continuously welded corners, rabbets, stops, and seamless face joints.
 - 3. Provide fully welded frames with temporary spreader bars. No open seams are acceptable.
 - 4. Electrical Knock Out Boxes: Factory weld 18 gauge electrical knock out boxes to frame for electrical hardware preps; included but not limited to electric thru wire hinges, electrical raceways, door position switches, electric strikes, jamb mount card readers, and magnetic locks as noted in door hardware sets in Division 8 Door Hardware.
 - a. Electrical knock out boxes are required at door position switches, electric strikes, card readers, and middle hinge locations for all exterior locations regardless of electrical hardware specified in Division 8 Door Hardware.
 - b. Provide electrical knock out boxes with 3/4-inch knockouts.
 - c. Conduit to be coordinated and installed in field from middle hinge box and strike box to door position box.
 - d. Electrical knock out boxes to comply with NFPA requirements and fit electrical door hardware as specified in hardware sets in Division 8 Door Hardware.
 - e. Electrical knock out boxes for continuous hinges should be located in the center of the vertical dimension on the hinge jamb.

- f. Provide field installed conduit per Division 28 section for standardized plug connectors to accommodate up to twelve (12) wires as required for electrified door hardware specified in hardware sets in Division 8 Door Hardware. Provide sufficient number of concealed wires to accommodate electric function of specified hardware. Wire nut connections are not acceptable.
- M. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.
- N. Locate hardware as indicated on Shop Drawings or, if not indicated, according to ANSI A250.8.
- O. Glazing Stops: Manufacturer's standard, formed from 0.032-inch- thick steel sheet.
 - 1. Provide non-removable stops on outside of exterior doors and on secure side of interior doors for glass, louvers, and other panels in doors.
 - 2. Provide screw-applied, removable, glazing stops on inside of glass, louvers, and other panels in doors.
- P. Astragals: As required by NFPA 80 to provide fire ratings indicated.

2.5 FINISHES

- A. Prime Finish: Manufacturer's standard, factory-applied coat of rust-inhibiting primer complying with ANSI A250.10 for acceptance criteria.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install hollow metal doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified.
- B. Placing Frames: Comply with provisions in 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. Except for frames located in existing walls or partitions, place frames before construction of enclosing walls and ceilings.
 - 2. In concrete construction, provide at least three wall anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Acceptable anchors include masonry wire anchors and masonry T-shaped anchors.
 - 3. In metal-stud partitions, provide at least three wall anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Attach wall anchors to studs with screws.
 - 4. Install fire-rated frames according to NFPA 80.
 - 5. For openings 90 inches or more in height, install an additional anchor at hinge and strike jambs.
 - 6. Seal open seams in exterior units to whatever extent not completed at the factory prior to painting.

- C. Door Installation: Comply with ANSI A250.8. Fit hollow-metal doors accurately in frames, within clearances specified in ANSI A250.8. Shim as necessary to comply with SDI 122 and ANSI/DHI A115.1G.
 - 1. Fire-Rated Doors: Install within clearances specified in NFPA 80.
 - 2. Smoke-Control Doors: Install to comply with NFPA 105.

3.2 ADJUSTING AND CLEANING

- A. Cleanup: Remove excess weld splatter by grinding flush with adjacent surfaces, without grinding skips or gouging parent metal. Refer to Section 09 90 00 - Paints and Coatings for surface preparation, primer and field applied finish coats.
- B. Prime-Coat Touchup: Immediately after installation, sand smooth any rusted or damaged areas of prime coat and apply touch up of compatible air-drying primer.
- C. Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

END OF SECTION 08 11 13