

SECTION 08 13 13
HOLLOW METAL DOORS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. [Non-fire-rated steel doors.]
 - 2. [Fire-rated steel doors.]

- B. Related Sections:
 - 1. Section 08 71 00 - Door Hardware: Hardware and weatherstripping.
 - 2. [Section 08 80 00 - Glazing: Glass for vision panels in doors.]
 - 3. Section 09 91 00 - Painting: Field painting.

1.02 REFERENCE STANDARDS

- A. American National Standards Institute:
 - 1. ANSI A250.8 - Recommended Specifications for Standard Steel Door and Frames.
 - 2. ANSI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.

- B. ASTM International:
 - 1. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - 2. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.

- C. CBC - California Building Code.

- D. Door and Hardware Institute:
 - 1. DHI A115 Series - Specifications for Steel Doors and Frame Preparation for Hardware.

- E. National Association of Architectural Metal Manufacturers:
 - 1. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames.

- F. National Fire Protection Association:
 - 1. NFPA 80 - Standard for Fire Doors and Fire Windows.
 - 2. [NFPA 105 - Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives.]

- G. Underwriters Laboratories Inc.:
 - 1. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies.
 - 2. UL 1784 - Standard for Air Leakage Tests of Door Assemblies.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate hollow metal door details with work supporting or adjoining steel doors.
 - 2. Coordinate hollow metal door work with hardware installation.

3. [Coordinate installation of glass and glazing in doors.]
 4. [Coordinate installation of electrical connections to electrical hardware items.]
- B. [Preinstallation Meeting:]
- C. [Sequencing:]
1. [Sequence fabrication and installation to ensure wire connections for electrified door hardware and security devices are achieved in an orderly and expeditious manner.]
- D. Scheduling:
1. Deliver frames only after proper facilities are available.

1.04 [SUSTAINABLE CHARACTERISTICS]

- A. Section 01 35 63 - Sustainability Project Requirements: Requirements for sustainable design compliance.
- B. Materials and Resources Characteristics:
1. [Recycled Content Materials: Furnish materials with maximum available recycled content including:
SPEC NOTE *List materials specified in this section required to have recycled content.*
a. [_____].]
 2. [Regional Materials: Furnish materials extracted, processed, and manufactured within 500 miles of Project site.]
SPEC NOTE *List materials specified in this section required to be regional materials.*
a. [_____].]

1.05 SUBMITTALS

- A. See Section 01 33 00 - Submittal Procedures for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced grade standard.
- C. Shop Drawings:
1. Reference each door using Door Number and hardware group.
 2. Show each opening indicating opening criteria, door type, elevation, fire-resistive rating, dimensions, machining criteria for hardware and identifying location of different finishes, if any.
- D. Samples: Only as requested.
- E. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.
- F. Certificates:
1. Manufacturer's certification that it meets requirements of this Section.
 2. Manufacturer's certification that products meet or exceed specified requirements.

1.06 [SUSTAINABLE DESIGN SUBMITTALS]

- A. Section 01 35 63 - Sustainability Project Requirements: Requirements for sustainable design submittals.

- B. Manufacturer's Certificate: Certify products meet or exceed specified sustainable design requirements.
 - 1. Materials Resources Certificates:
 - a. Certify source and origin for [salvaged] [and] [reused] products.
 - b. Certify recycled material content for recycled content products.
 - c. Certify source for regional materials and distance from Project site.
- C. Product Cost Data: Submit cost of products to verify compliance with Project sustainable design requirements. Exclude cost of labor and equipment to install products.
 - 1. Provide cost data for the following products:
 - a. Salvage products.
 - b. Reused products/
 - c. Products with recycled material content.
 - d. Regional products.

1.07 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.08 DELIVERY, STORAGE, AND PROTECTION

- A. Store in accordance with NAAMM HMMA 840.
- B. Prior to delivery to site, identify each door with individual Door Number, type, and size in way markings will not show through finish painting.
- C. Deliver, store, and handle doors to prevent damage or deformation.
- D. Accept doors on site in manufacturer's packaging. Inspect for damage.
- E. Storage and Protection:
 - 1. Protect doors with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.
 - 2. Provide clean, dry surfaces, or platforms as required, and protect from deterioration and foreign matter.
 - 3. Do not store on ground.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Doors:
 - 1. Republic Doors and Frames.
 - 2. Steelcraft.
 - 3. Curries.
 - 4. Stile Custom Metal.
 - 5. or equal.

2.02 DOOR TYPES

- A. Flush Doors (Non-Fire-Rated):
 - 1. Doors shall have no lites or louvers; or no lites or louvers greater than one-half door height.
 - 2. Door faces shall be flush and seamless.

3. Interior Doors: ANSI A250.8, Level 2, heavy duty.
 4. [Exterior Doors: ANSI A250.8, Level 3, extra heavy-duty.]
- B. [Stile and Rail Doors: Doors shall have lites or louvers greater than one-half door height.]
- C. [Fire-Resistive Rated Doors:]
1. Fabricate in accordance with flush door type as noted above.
 2. Conform to NFPA 80 when tested for the class of door or door opening shown.
 3. [Doors in 20 Minute Fire Rating: Meet requirements of CBC Section 715 and UL 10C without hose stream test.]
 4. [Doors in 3/4 Hour or Longer Fire Rating: Meet requirements of CBC Section 715 and UL 10C.]
 5. [Doors into stairway enclosures shall have maximum transmitted temperature of 450 degrees Fahrenheit at end of 30 minutes of standard fire test exposure.]
 6. [Doors in smoke and draft control assembly shall meet requirements of UL 1784 and installed in accordance with NFPA 105.]
 7. Attach label from agency acceptable to authority having jurisdiction to identify each fire rated door.
 - a. [Indicate temperature rise for stair doors.]
 - b. [Attach smoke label to smoke and draft control doors.]
 8. [Fire-resistive rated pairs of doors with 30 minute, 3/4 hour, 1 hour, and 1-1/2 hour fire-resistive rating shall have been fire tested without overlapping astragal.]

2.03 MATERIALS

- A. Door Face:
1. Sheet Steel: Cold-rolled, commercial, quality; ASTM A1008/A1008M.
 2. [Galvanized Sheet Steel: Zinc-iron alloy finish (galvannealed) to meet requirements of ASTM A653/A653M, coating designation A60.]
- B. Framing Members and Channels: Commercial grade, cold-rolled steel.
- C. Sound-Deadening Material: Chemically inert, incombustible, and moisture-resistant; as recommended by door manufacturer.
- D. Factory Applied Primer: Provide primer compatible with paint systems specified in Section 09 91 00 - Painting and meeting the requirements of ANSI A250.10.

2.04 FABRICATION

- A. Fabricate steel doors in accordance with ANSI A250.8 unless otherwise indicated.
- B. Preparation:
1. Verify frame details; obtain reviewed hardware schedule, templates, and other information.
 2. Verify [fire-resistive rating,] size, and design of each opening.
- C. Material Usage:
1. Fabricate interior doors from sheet.
 2. Fabricate exterior doors from galvanized sheet steel.
- D. General:
1. Fabricate steel doors as rigid units, neat in appearance and free from defects, warp, or buckle.

2. Reinforce and weld joints. Weld exposed seams, grind them smooth, dress, and make smooth flush and invisible. Filler to conceal welds or manufacturing defects is not acceptable.
 3. Use no exposed fasteners, except for attaching glazing stops.
 4. Door Edges:
 - a. Bevel both stile edges 1/8 inch in 2 inches.
 - b. Fabricate flush. Seams will be permitted only if uniform and run continuous from top to bottom of door.
 5. Door Top Closures: Flush with top of faces and edges.
 6. Undercut interior doors 1/4 inch from bottom of door to top of finish floor covering, unless otherwise noted.
 7. Exterior Doors: Provide weep holes at bottoms; make tops waterproof.
 8. Make provision for electrical wiring to pass thru door from power transfer hinge to locksets and exit devices where required.
- E. Flush Doors:
1. Face Sheet Gage: [18 gage at interior] [and] [16 gage at exterior] doors.
 2. Internal Construction: Conform to one of the following methods, in accordance with the manufacturer's standard practice.
 - a. Vertical and/or horizontal steel, rigidly formed members welded to face sheets. Fill voids between face sheets and framing members with sound-deadening material.
 - b. Laminate face sheets to impregnated paper honeycomb core completely filling inside of door.
 3. Door faces shall be flush and seamless.
 4. Form top and bottom edges of minimum 16 gage continuous channels welded to face sheet.
- F. [Stile and Rail Doors:]
1. Fabricate tubular stiles and rails from 16 gage sheet.
 2. Reinforce and weld mitered corners with no visible face seams.
- G. [Fire-Resistive Rated Doors: Fabricate to meet requirements of Door Types Article.]
- H. Provisions for Hardware and Security Devices:
1. Prepare doors for hardware in accordance with DHI A115 Series, with reinforcement welded in place, in addition to other requirements specified in door grade standard.
 2. Factory machine doors for finish hardware and security devices in accordance with finish hardware requirements according to templates.
 3. Provide reinforcing and cutouts as required to receive hardware.
 4. Factory machine as required for sensors, contacts, and similar devices as indicated on Drawings.
 5. Make total thickness of reinforced conditions equal to nominal thickness of fasteners required by hardware items.
 6. Drill and tap as required for hardware.
 7. Provide reinforcement hardware and security devices as noted, tack weld to door framing.
 - a. Hinges and Pivots: Eight gage minimum.
 - b. Lock Faces, Flush Bolts: 16 gage minimum.
 - c. Closers: 14 gage minimum.
 - d. Exit Devices: 16 gage minimum
 - e. Other Surface Mounted Hardware and Security Devices: 14 gage minimum.
- I. [Louvers:]
1. Fabricate sight proof louvers with inverted V blades from 16 gage steel to equal door thickness, lap pressed-metal frame around opening.
 2. [Fabricate fire-resistive rated louvers as required to meet fire-resistive rating of door assembly.]

- J. [Vision Panel Moldings:]
 - 1. Minimum 20 gage steel.
 - 2. Secure with rustproof countersunk Phillips head screws.
 - 3. Provide non-removable glazing stops [on exterior side of exterior doors and] on the secure side of interior doors.

- K. [Astragals:]
 - 1. Provide overlapping astragal on pairs of exterior doors.
 - 2. Fire-Resistive Rated Doors: Provide overlapping astragal on pairs of fire-resistive rated doors, except where each leaf is equipped with a vertical rod exit device.

2.05 FINISHES

- A. Preparation: Grind smooth edges and rough spots apply metallic filler and sand where necessary to achieve smooth surface; clean surfaces of rust, grease, and other impurities.

- B. [Interior Doors: After fabrication, chemically etch and apply one baked-on prime coat.]

- C. [Exterior Doors: After fabrication, touch up abraded galvanizing, chemically etch, and apply one baked-on prime coat.]

- D. [Sight Proof Louvers: Paint interior portions flat black and otherwise finish same as door in which occurring.]

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify proper coordination of doors with frames and hardware.

- B. Verify opening sizes and tolerances are acceptable.

- C. Examine receiving frames and reviewed hardware schedules to verify proper coordination with doors.

- D. Verify that building is secured and free from weather elements prior to installing interior door hardware.

- E. [Verify electric power is available to power operated devices and is of correct characteristics.]

- F. Replace with good material any part or item found damaged, defective, or inadequate before installation.

- G. Correct unacceptable conditions before proceeding with installation.

- H. Do not start work until unsatisfactory conditions are corrected.

3.02 INSTALLATION

- A. Install doors in accordance with ANSI A250.8.
 - 1. Install fire rated units in accordance with CBC Section 715 and requirements for fire rating as indicated on Drawings.
 - 2. [Install smoke and draft control assembly in accordance with NFPA 105.]

- B. Install steel doors in accordance with the final shop drawings and manufacturer's data, except where more stringent requirements are specified herein.
- C. Install doors at correct openings; insure smooth swing and proper closure with frame.
- D. Hang doors to obtain free swinging operation without binding, sticking, or sagging. Maintain proper clearances between door and frame.
- E. Hardware: Install in accordance with "Standards for Installation" Article of Section 08 71 00 – Door Hardware.

3.03 ADJUSTING

- A. Adjust doors for smooth and balanced door movement and correct swinging, closing, and latching. Lubricate or wax hardware and moving parts as required.

END OF SECTION