

SECTION 08100
METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Furnish and install metal doors and metal door frames as indicated on the Drawings or specified herein
- B. Additional Requirements Specified Elsewhere
 - 1. Section 01340: Shop Drawings, Product Data and Samples
 - 2. Section 01400: Quality Control
 - 3. Section 01600: Materials and Equipment
- C. Related Requirements Specified Elsewhere
 - 1. Section 04200: Unit Masonry
 - 2. Section 06100: Carpentry
 - 3. Section 07900: Joint Sealants
 - 4. Section 08710: Finish Hardware
 - 5. Section 08800: Glazing
 - 6. Section 09900: Painting

1.2 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies
 - 1. Provide UL label on all doors and frames as required by code
 - 2. Refer to Door Schedule on Drawings

1.3 SUBMITTALS

- A. In Accordance with Section 01340
- B. Shop Drawings and Product Data
 - 1. Submit shop drawings and product data for all items under this section
- C. Templates
 - 1. Hardware templates for all hardware mounted on hollow metal work shall be submitted by the hardware supplier directly to the hollow metal manufacturer immediately after acceptance of the hardware schedule
 - 2. Failure to receive templates with reasonable promptness shall be reported to the General Contractor

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store doors on edge
- B. Store frames in such a position as to prevent twisting
- C. Doors with dimples or dents may not be installed

1.5 WARRANTY

- A. Provide warranty against malfunction due to defects in material or workmanship for a period of two years following acceptance of the building by the Owner

PART 2 - PRODUCTS

2.1 DOOR AND FRAME MANUFACTURERS

- A. Design Basis
 - 1. Carbon steel doors and frames
 - a. Amweld Building Products
 - b. Southwestern Hollow Metals, Raton, New Mexico
 - c. Gateway Metal Products, Raton, New Mexico
 - d. Hol-O-Met Corporation, Mesa, Arizona
 - e. Windsor Republic Doors, McKenzie, TN
 - f. Steelcraft
 - g. Or equivalent
 - 2. Aluminum doors and frames
 - a. Cline Aluminum Doors, Inc, Bradenton, Florida
 - b. Alutech Corporation, Miami, Florida
 - c. Or equivalent
 - 3. Stainless steel doors and frames
 - a. Ceco Door, Milan, Tennessee
 - b. Or equivalent
 - 4. Equivalent products of other manufacturers may be accepted subject to compliance with design, function, materials, and performance of the specified items

2.2 HOLLOW METAL FRAMES

- A. All frames for hollow metal doors shall be of the material and design sections as detailed on the Drawings and assembled as indicated
 - 1. Exterior applications
 - a. Carbon steel
 - 1) Minimum thickness of 14 gauge steel
 - 2) Galvanized metal prior to top coating application
 - b. Aluminum
 - 1) Aluminum alloy 6063-T5
 - 2) Minimum thickness of 0.125 inches
 - 3) Clear anodized finish, minimum 0.4 mils

- a) Bituminous coating on inside of frames to protect against contact with grout fill of frame, minimum 30 mils
 - b) No top coat application required over anodized finish
 - 4) Mechanically joined head and jamb sections with concealed stainless steel hardware
 - c. Stainless steel
 - 1) Type 304 or 316 stainless steel
 - 2) Minimum thickness of 14 gauge
 - 3) Nonreflective satin finish
 - a) No top coat application required over satin finish
 - 2. Interior Applications
 - a. Carbon steel
 - 1) Minimum thickness of 16 gauge steel unless shown otherwise in Door Schedule
 - 2) Nongalvanized prior to top coating unless otherwise specified in Door Schedule
 - b. Aluminum
 - 1) Same as specified for exterior applications
 - c. Stainless steel
 - 1) Type 304 or 316 stainless steel
 - 2) Minimum thickness of 16 gauge
 - 3) Nonreflective satin finish
 - a) No top coat application required over satin finish
- B. Construct frames encompassing one or more doors of as large a size as practical to reduce to a minimum the number of job fabricated joints
 - 1. All joints and connections including job fabricated joints shall be welded and ground, except as indicated for aluminum frames, and the entire assembly reinforced and braced as required to ensure absolute rigidity
 - 2. Where so indicated or as required, provide channel stiffening within and securely welded to frame member, or securely fastened to frame member with concealed stainless steel hardware for aluminum frames
- C. Machine frames for attachment of hardware including mortising, reinforcing, drilling, and tapping for hinges
 - 1. Reinforcing and hardware material shall be provided in stainless steel or aluminum for stainless steel and aluminum frames
 - 2. Field drill and tap prepared frame and reinforcing as recommended by manufacturers of stainless steel and aluminum frames
 - 3. Machine frames for heavy duty electric strikes where indicated on Door Schedule
 - a. Prepare frames for Hanchett Entry Systems, Inc. (HES) 1006 series heavy duty electric strikes with KM option faceplate
 - b. Contact HES Technical Service Department Helpline at 1-800-626-7590 and www.hesinnovations.com
- D. Furnish anchors of type and number required for anchoring frames to structure, partitions, etc., as follows
 - 1. Three (3) jamb anchors on jambs 7'-2" high or less

2. Wire anchors will not be allowed
- E. Provide such installation instructions as are necessary to ensure proper installation of anchors

2.3 HOLLOW METAL DOORS

- A. All doors shall be hollow metal, flush, swing type doors
- B. Construct hollow metal doors from materials indicated on Drawings
1. Carbon steel and type 304 or 316 stainless steel
 - a. Flush tops, sides, and bottoms
 - b. All door edges welded and ground smooth
 - c. All doors: Minimum thickness of 16 gauge steel
 - d. All doors: 1³/₄-inch thick
 2. Aluminum
 - a. Aluminum alloy 6063-T5
 - b. All doors: 1³/₄-inch thick
 - c. Aluminum edge cap on all door edges
 - d. Aluminum box subframe
 - 1) Full perimeter of door
 - 2) Minimum dimensions: 1³/₈" x 4¹/₂" x 1¹/₈"
 - 3) Internal mechanical joining by minimum 3⁸/₈-inch diameter plated steel tie rods and stainless steel hardware
 - 4) Rigid foam or honeycomb core to fill all voids between subframe members
 - e. Aluminum face sheets
 - 1) One-piece construction
 - 2) Minimum thickness: 0.04 inches
 - 3) Full face bonded hardboard backer
 - 4) Smooth finish surface
 - f. Minimum total skin thickness of face sheet and hard board backer: 1¹/₈ inch
- C. All exterior doors shall have thermal insulation, minimum R value = 2.0
- D. Glazing trim material to match door material
1. Finish or top coating to match door and frame
 2. No exposed fasteners on corrosive environment or high humidity side of door
- E. Refer to Door Schedule for UL fire-rating requirements

2.4 MISCELLANEOUS ITEMS

- A. Provide all closures, sub-sills, panels, fillers, astragals and other accessories as required
- B. Heavy duty electric strikes
 - 1. Design equipment: Hanchett Entry Systems, Inc. 1006 series heavy duty electric strike
 - a. KM faceplate option
 - b. 12 volt DC power supply to strike solenoid
 - c. Frame to accommodate 1/2-inch diameter flexible conduit from strike pocket to head of frame
 - 2. Refer to Door Schedule for locations of electric strike installations

2.5 FINISH

- A. Thoroughly clean all surfaces of grease, rust, and scale to insure coating adherence as well as the proper preparation and appearance of finished stainless steel
- B. For doors to be painted, apply one coat of factory primer compatible with finish coating system specified in Section 09900
 - 1. Assure primer is compatible with galvanized coating
 - 2. Coordinate special coatings in areas subject to high humidity, periodic water splash and washdown and potentially corrosive atmosphere
 - 3. Apply filler to doors where required to produce a smooth surface prior to application of primer

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Frames
 - 1. Set frames accurately in accordance with details, straight and free of twist with head level and jambs plumb
 - 2. Rigidly anchor to walls and partitions and securely brace until surrounding work is completed
 - 3. Provide deflection clearances at frame heads where indicated
 - 4. Wherever possible, leave spreader bars in place until frames are securely anchored
- B. Doors
 - 1. Apply hardware in conformance with hardware manufacturer's templates and instructions
 - 2. Hang doors to be free of binding with all hardware functioning properly

C. Miscellaneous Items

1. Install closures, panels, fillers, astragals, smoke gaskets and rubber silencers
2. Install all miscellaneous hardware, conduit, conductors and other accommodations for fully functional electric strike system with proximity card reader at locations specified on Door Schedule

3.2 ADJUSTING

- A. At completion of job, adjust doors and hardware as required and leave in proper operating condition

END OF SECTION