SECTION 08 11 13
HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies steel frames and related components.

B. Terms relating to steel frames as defined in ANSI A123.1 and as specified.

1.2 RELATED WORK

A. Grout for hollow metal frames: Section 04 05 16, MASONRY GROUTING.

B. Door Hardware: Section 08 71 00, DOOR HARDWARE.

C. Glazing: Section 08 80 00, GLAZING.

1.3 SUBMITTALS

A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Manufacturers Literature and Data:

1.4 SHIPMENT

A. Prior to shipment label each frame to show location, size, door swing and other pertinent information.

B. Fasten temporary steel spreaders across the bottom of each door frame.

1.5 STORAGE AND HANDLING

A. Store frames at the site under cover.

B. Protect from rust and damage during storage and erection until completion.

1.6 APPLICABLE PUBLICATIONS

A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.

B. Door and Hardware Institute (DHI):

A115 Series.....Steel Door and Frame Preparation for Hardware, Series A115.1 through A115.17 (Dates Vary)

C. Steel Door Institute (SDI):

113-1979.....Apparent Thermal Performance for Steel Door and Frame Assemblies

114-1979.....Acoustical Performance for Steel Door and Frame Assemblies

A250.8-98.....Standard Steel Doors and Frames

D. American Society for Testing and Materials (ASTM):
A568/568-M-07.....Steel, Sheet, Carbon, and High-Strength, Low-alloy, Hot-Rolled and Cold-Rolled
A1008-07.....Steel, sheet, Cold-Rolled, Carbon, Structural, High Strength Low Alloy and High Strength Low Alloy with Improved Formability
E90-04.....Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions

E. The National Association Architectural Metal Manufactures (NAAMM):
Metal Finishes Manual (1988 Edition)

F. Underwriters Laboratories, Inc. (UL):
Fire Resistance Directory

PART 2 - PRODUCTS

2.1 MATERIALS

A. Sheet Steel: ASTM A1008, cold-rolled for panels (face sheets) of doors.

B. Anchors, Fastenings and Accessories: Fastenings anchors, clips connecting members and sleeves from zinc coated steel.

C. Prime Paint: Paint that meets or exceeds the requirements of A250.8.

2.2 FABRICATION GENERAL

A. GENERAL:
1. Follow SDI A250.8 for fabrication of standard steel doors, except as specified otherwise. Doors to receive hardware specified in Section 08 71 00, DOOR HARDWARE. Tolerances as per SDI A250.8. Thickness, 44 mm (1-3/4 inches), unless otherwise shown.
2. When vertical steel stiffeners are used for core construction, fill spaces between stiffeners with mineral fiber insulation.
3. Glazed openings: Manufacturer’s standard vision lite kit.

B. Heavy Duty Doors: SDI A250.8, Level 2, Model 2 of size and design shown. Core construction types a, d, or f, for interior doors.

C. Smoke Doors:
1. Close top and vertical edges flush.
2. Provide seamless vertical edges.
3. Provide clearance at head, jamb and sill as specified in NFPA 80.

D. Fire Rated Doors (Labeled):
1. Conform to NFPA 80 when tested by Underwriters Laboratories, Inc., Inchcape Testing Services, or Factory Mutual for the class of door or door opening shown.

2. Fire rated labels of metal, with raised or incised markings of approving laboratory shall be permanently attached to doors.
3. Close top and vertical edges of doors flush. Vertical edges shall be seamless.

E. Custom Metal Hollow Doors:
1. Provide custom hollow metal doors where nonstandard steel doors are indicated. Door size(s), design, materials, construction, gages and finish shall be as specified for of standard steel doors.
2. Dutch Doors:
a. Construct with two leaves, of same construction as specified for flush doors.
1. Provide astragal attached to the top leaf of dutch doors.
b. Fabricate shelves of not less than 1.3 mm (0.053 inch) thick steel of size shown.
c. Stock type brackets fabricated of the same type metal used to fabricate shelves.
d. Shelves and brackets may be either welded, bolted, or screw-attached in place.

2.3 METAL FRAMES

A. General:
1. SDI A250.8, 1.3 mm (0.053 inch) thick sheet steel, types and styles as shown or scheduled.
2. Knocked-down frames are not acceptable.
3. Do not drill metal frames for silencers.

B. Reinforcement and Covers:
1. SDI A250.8 for, minimum thickness of steel reinforcement welded to back of frames.
2. Provide mortar guards securely fastened to back of hardware reinforcements.

C. Frame Anchors:
1. Floor anchors:
a. Where floor fills occur, provide extension type floor anchors to compensate for depth of fill.
b. At bottom of jamb use 1.3 mm (0.053 inch) thick steel clip angles welded to jamb and drilled to receive two 6 mm (1/4 inch) floor bolts. Use 50 mm x 50 mm (2 inch by 2 inch) 9 mm by (3/8 inch) clip angle for lead lined frames, drilled for 9 mm (3/8 inch) floor bolts.

2. Jamb anchors:
   a. Locate anchors on jambs near top and bottom of each frame, and at intermediate points not over 600 mm (24 inches) apart.
   b. Form jamb anchors of not less than 1 mm (0.042 inch) thick steel unless otherwise specified.
   c. Anchors set in masonry: Use adjustable anchors designed for friction fit against the frame and for extension into the masonry not less than 250 mm (10 inches). Use one of following type:
      1) Wire loop type of 5 mm (3/16 inch) diameter wire.
      2) T-shape or strap and stirrup type of corrugated or perforated sheet steel.
   d. Anchors for frames set in prepared openings:
      1) Steel pipe spacers with 6 mm (1/4 inch) inside diameter welded to plate reinforcing at jamb stops or hat shaped formed strap spacers, 50 mm (2 inches) wide, welded to jamb near stop.
      2) Drill jamb stop and strap spacers for 6 mm (1/4 inch) flat head bolts to pass thru frame and spacers.
      3) Two piece frames: Subframe or rough buck drilled for 6 mm (1/4 inch) bolts.

2.3 SHOP PAINTING

A. Shop paint hollow metal frames per SDI A250.8.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Plumb, align and brace frames securely until permanent anchors are set.
   1. Use triangular bracing near each corner on both sides of frames with temporary wood spreaders at midpoint.
   2. Use wood spreaders at bottom of frame if the shipping spreader is removed.
   3. Protect frame from accidental abuse.
   4. Where construction will permit concealment, leave the shipping spreaders in place after installation, otherwise remove the spreaders after the frames are set and anchored.
   5. Remove wood spreaders and braces only after the walls are built and jamb anchors are secured.

B. Floor Anchors:
   1. Anchor the bottom of door frames to floor with two 6 mm (1/4 inch) diameter expansion bolts. Use 9 mm (3/8 inch) bolts on lead lined frames.

2. Power actuated drive pins may be used to secure frame anchors to concrete floors.

C. Jamb Anchors:

1.2. Secure anchors to sides of studs with two fasteners through anchor tabs. Use steel drill screws to steel studs.

3.2 INSTALLATION OF DOORS AND APPLICATION OF HARDWARE

A. Install doors and hardware as specified in Section 08 71 00, DOOR HARDWARE.

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