

SECTION 08 11 13

HOLLOW METAL FRAMES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies steel frames and related components.
- B. Terms relating to steel doors and frames as defined in ANSI A123.1 and as specified.

1.2 RELATED WORK

- A. Side folding security grille: Section 08 33 00, Side Folding Doors and Grilles.
- B. Door Hardware: Section 08 71 00, DOOR HARDWARE.
- C. Glazing: Section 08 80 00, GLAZING.
- D. Card readers: Section 28 13 00, ACCESS CONTROL.

1.3 TESTING

- A. An independent testing laboratory shall perform testing.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturers Literature and Data:
  - 1. Fire rated doors and frames, showing conformance with NFPA 80 and Underwriters Laboratory, Inc., or Intertek Testing Services or Factory Mutual fire rating requirements.

1.5 SHIPMENT

- A. Prior to shipment label each door and frame to show location, size, door swing and other pertinent information.
- B. Fasten temporary steel spreaders across the bottom of each door frame.

1.6 STORAGE AND HANDLING

- A. Store doors and frames at the site under cover.
- B. Protect from rust and damage during storage and erection until completion.

1.7 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):
  - 1. A115 Series Steel Door and Frame Preparation for Hardware, Series

A115.1 through A115.17 (Dates Vary)

C. Steel Door Institute (SDI):

1. 113-01 Thermal Transmittance of Steel Door and Frame Assemblies
2. 128-1997 Acoustical Performance for Steel Door and Frame Assemblies
3. A250.8-03 Standard Steel Doors and Frames

D. American Society for Testing and Materials (ASTM):

1. A167-99(R2004) Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
2. A568/568-M-07 Steel, Sheet, Carbon, and High-Strength, Low-alloy, Hot-Rolled and Cold-Rolled
3. A1008-08 Steel, sheet, Cold-Rolled, Carbon, Structural, High Strength Low Alloy and High Strength Low Alloy with Improved Formability
4. B209/209M-07 Aluminum and Aluminum-Alloy Sheet and Plate
5. B221/221M-08 Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes
6. D1621-04 Compressive Properties of Rigid Cellular Plastics
7. E90-04 Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions

E. The National Association Architectural Metal Manufacturers (NAAMM):

1. Metal Finishes Manual (1988 Edition)

F. National Fire Protection Association (NFPA):

1. 80-09 Fire Doors and Fire Windows

G. Underwriters Laboratories, Inc. (UL):

1. Fire Resistance Directory

H. Intertek Testing Services (ITS):

1. Certifications Listings...Latest Edition

I. Factory Mutual System (FM):

1. Approval Guide

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 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. Frames for labeled fire rated doors and windows.
    - a. Comply with NFPA 80. Test by Underwriters Laboratories, Inc., Inchcape Testing Services, or Factory Mutual.
    - b. Fire rated labels of approving laboratory permanently attached to frames as evidence of conformance with these requirements. Provide labels of metal or engraved stamp, with raised or incised markings.
  3. Knocked-down frames are not acceptable.
- B. Reinforcement and Covers:
1. SDI A250.8 for, minimum thickness of steel reinforcement welded to back of frames.
- C. Terminated Stops: SDI A250.8.
1. Provide hospital stops at a height approximately 6" high to match existing frames.
- D. Glazed Openings:
1. Integral stop on exterior, corridor, or secure side of door.
  2. Design rabbet width and depth to receive glazing material or panel shown or specified.
- E. Frame Anchors:
1. Floor anchors:
    - a. 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 (3/8 inch) clip angle for lead lined frames, drilled for 9 mm (3/8 inch) floor bolts.
    - b. Where mullions occur, provide 2.3 mm (0.093 inch) thick steel channel anchors, drilled for two 6 mm (1/4 inch) floor bolts and frame anchor screws.
    - c. Where sill sections occur, provide continuous 1 mm (0.042 inch) thick steel rough bucks drilled for 6 mm (1/4 inch) floor bolts and frame anchor screws. Space floor bolts at 50 mm (24 inches) on center.
  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, except for fire rated frames space anchors as required by labeling authority.
    - b. Form jamb anchors of not less than 1 mm (0.042 inch) thick steel unless otherwise specified.
    - c. Anchors for stud partitions: Either weld to frame or use lock-in snap-in type. Provide tabs for securing anchor to the sides of the studs.
    - 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.
- e. Anchors for observation windows and other continuous frames set in stud partitions.
  - 1) In addition to jamb anchors, weld clip anchors to sills and heads of continuous frames over 1200 mm (4 feet) long.
  - 2) Anchors spaced 600 mm (24 inches) on centers maximum.
- f. Modify frame anchors to fit special frame and wall construction and provide special anchors where shown or required.

## 2.3 SHOP PAINTING

- A. 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. Jamb Anchors:
  1. Anchors in masonry walls: Embed anchors in mortar. Fill space between frame and masonry wall with grout or mortar as walls are built.
  2. Coat frame back with a bituminous coating prior to lining of grout filling in masonry walls.
  3. Secure anchors to sides of studs with two fasteners through anchor tabs. Use steel drill screws to steel studs.
  4. Frames set in prepared openings of masonry or concrete: Expansion bolt to wall with 6 mm (1/4 inch) expansion bolts through spacers. Where subframes or rough bucks are used, 6 mm (1/4 inch) expansion bolts on 600 mm (24 inch) centers or power activated drive pins 600 mm (24 inches) on centers. Secure two piece frames to subframe or rough buck with machine screws on both faces.
- C. Install anchors for labeled fire rated doors to provide rating as required.

### 3.2 INSTALLATION OF DOORS AND APPLICATION OF HARDWARE

- A. Install doors and hardware as specified in Sections Section 08 14 00, WOOD DOORS Section 08 71 00, DOOR HARDWARE .

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