

**SECTION 08 11 13
HOLLOW METAL DOORS AND FRAMES**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies steel doors, 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. Frames fabricated of structural steel: Section 05 50 00, METAL FABRICATIONS.
- B. Door Hardware: Section 08 71 00, DOOR HARDWARE.

1.3 TESTING

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 // and temperature rise rating for stairwell doors. Submit proof of temperature rating //.

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. Federal Specifications (Fed. Spec.):
 - L-S-125B.....Screening, Insect, Nonmetallic

- C. Door and Hardware Institute (DHI):
A115 Series.....Steel Door and Frame Preparation for Hardware,
Series A115.1 through A115.17 (Dates Vary)
- D. Steel Door Institute (SDI):
113-01.....Thermal Transmittance of Steel Door and Frame
Assemblies
128-1997.....Acoustical Performance for Steel Door and Frame
Assemblies
A250.8-03.....Standard Steel Doors and Frames
- E. American Society for Testing and Materials (ASTM):
A167-99(R2004).....Stainless and Heat-Resisting Chromium-Nickel
Steel Plate, Sheet, and Strip
A568/568-M-07.....Steel, Sheet, Carbon, and High-Strength, Low-
alloy, Hot-Rolled and Cold-Rolled
A1008-08.....Steel, sheet, Cold-Rolled, Carbon, Structural,
High Strength Low Alloy and High Strength Low
Alloy with Improved Formability
B209/209M-07.....Aluminum and Aluminum-Alloy Sheet and Plate
B221/221M-08.....Aluminum and Aluminum-Alloy Extruded Bars,
Rods, Wire, Profiles and Tubes
D1621-04.....Compressive Properties of Rigid Cellular
Plastics
D3656-07.....Insect Screening and Louver Cloth Woven from
Vinyl Coated Glass Yarns
E90-04.....Laboratory Measurement of Airborne Sound
Transmission Loss of Building Partitions
- F. The National Association Architectural Metal Manufacturers (NAAMM):
Metal Finishes Manual (1988 Edition)
- G. National Fire Protection Association (NFPA):
80-09.....Fire Doors and Fire Windows
- H. Underwriters Laboratories, Inc. (UL):
Fire Resistance Directory
- I. Intertek Testing Services (ITS):
Certifications Listings...Latest Edition
- J. Factory Mutual System (FM):
Approval Guide

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Anchors, Fastenings and Accessories: Fastenings anchors, clips connecting members and sleeves from zinc coated steel.
- B. 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.
 - 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.
 - 2. Provide mortar guards securely fastened to back of hardware reinforcements except on lead-lined frames.
- C. Terminated Stops: SDI A250.8.
- D. 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 jambuse 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.
 - c. 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.
 - d. 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 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 stud partitions: Either weld to frame or use lock-in snap-in type. Provide tabs for securing anchor to the sides of the studs.
- e. 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

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. 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.

- D. Install anchors for labeled fire rated doors to provide rating as required.

3.2 INSTALLATION OF DOORS AND APPLICATION OF HARDWARE

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

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