

**SECTION 08750
INSTALLATION OF DOORS AND HARDWARE**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies the hanging of doors and installation of hardware.
- B. Fitting and preparation for hardware of unfinished wood doors.
- C. Installation of lock cylinders in special doors.

1.2 RELATED WORK

- A. Sealants for Thresholds: Section 07920, SEALANTS AND CAULKING.
- B. Fitting and Preparation for hardware: Section 08110, STEEL DOORS AND FRAMES.
- C. Fitting and Preparation for Hardware of prefinished and prefit wood doors: Section 08210, INTERIOR WOOD DOORS.
- D. Special doors specified to have the hardware except cylinders furnished with the door and installed in accordance with the specification for each particular door:
 - 1. Sliding aluminum doors and frames with automatic operators: Section 08721, AUTOMATIC DOOR OPERATORS.
 - 2. Roll-Up Doors and Grills: Section 08331, OVERHEAD ROLL-UP DOORS AND GRILLS.
- E. Door hardware, weatherstripping, seals, and location (height): Section 08710, BUILDER'S HARDWARE.

1.3 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in text by basic designation only.
- B. Door and Hardware Institute (DHI):
A115.1G-94.....Installation Guide for Doors and Hardware
- C. National Fire Protection Association (NFPA):
80-99.....Fire Doors and Windows
- D. American Society for Testing and Materials (ASTM):
A167-99.....Stainless and Heat-Resisting Chromium-Nickel
Steel Plate, Sheet and Strip

PART 2 - PRODUCTS

2.1 FASTENERS

- A. Use fasteners furnished with hardware for installation.

1. Where fasteners are not furnished with item, use fasteners of suitable size and type to harmonize with item as to material and finish and to suit material to which fastened.
 2. Use machine screws and metal expansion shields to secure hardware to concrete, ceramic or quarry tile, or solid masonry. Do not use fiber, plastic, and lead plugs or adhesives.
- B. Use non-ferrous metal fastenings exposed to weather.

2.2 SHIMS

Stainless steel, type 302 or 304, thickness for conditions required.

PART 3 - EXECUTION

3.1 INSTALLATION GENERAL

- A. Hang doors and install hardware when concrete work, plastering, tile setting, and other operations have been completed which increase humidity and dust in building.
- B. Do not hang wood doors in areas where materials are not sufficiently dry so as to not affect the dimensional stability of the door.
- C. Install hardware, except hinges, after field painting or sealing, specified in Section PAINTING.
- D. Center doors in the opening or frame with contact surfaces fit tight and even without forcing or warping the components.
- E. Replace doors and frames that do not conform to hardware height requirements.

3.2 FITTING WOOD DOORS

- A. Do not alter pre-fit and pre-finished doors.
- B. Unless otherwise detailed, fit hinged doors with 3 mm (1/8 inch) clearance at hinge stiles, 3 mm (1/8 inch) at top and lock or meeting stiles, and 19 mm (3/4 inch) between bottom rail and floor.
- C. Bevel lock edge and meeting stile of single acting wood doors 3 mm (1/8 inch) for each 50 mm (2 inches) of door thickness.
- D. Immediately after fitting and cutting of wood doors for hardware, seal edges of doors as specified in Section 09900, PAINTING.
- E. Mortise wood doors for hardware using templates furnished under Section, BUILDER'S HARDWARE.
- F. Cut sinkages for lock fronts, strikes, hinges and similar items same size as item installed.

3.3 INSTALLING DOORS AND BUILDER'S HARDWARE

- A. Install hardware at the location (heights) specified.
- B. Install in accordance with the manufacturer's printed instructions and DHI A115.1G unless specified otherwise.

- C. Drill and tap screw holes in steel frames and doors for surface mounted hardware.
- D. Use shims only at hinges where required to provide uniform clearance and alignment of door. Cut shims from stainless steel sheet to same size as hinge.
- E. Do not drive screws in place.
- F. Carefully fit and securely attach hardware items to doors and frames.
- G. Closers including those with hold-open features:
 - 1. Where closers are mounted on doors, mount with hex nuts and bolts; fasten foot to frame with machine.
 - 2. Mount to provide maximum door opening permitted by building construction or equipment.
 - 3. Use regular arm mounting except where door swing is less than 90 degrees or closer is on interior of exterior door or door is equipped with roller latch.
- H. Thresholds:
 - 1. Install thresholds in a bed of sealant with machine screws and expansion shields. For sealant see section, SEALANT AD CAULKING.
 - 2. Cut thresholds to closely fit jambs.
 - 3. Drill and cut for door holders and bottom bolts where required.
- I. Install automatic door bottom so that gasket is automatically forced down to tightly seal instantly when the door is fully closed, and raised instantly when the door begins to open. Mount automatic door bottom to provide 5 mm (3/16 inch) clearance at door bottom.
- J. Install seals on door frames for lightproof doors. Secure seals to door frames at jamb and heads with contact adhesive to prevent infiltration of light.
- K. Install rain drips for heads of door frames not protected by canopy or soffit.
- L. Install key cabinet as directed by the Resident Engineer.

3.4 INSTALLING FIRE RATED DOORS

- A. Install fire rated doors in accordance with NFPA 80.
- B. Do not remove qualified testing and inspection agency label.

3.5 INSTALLING SOUND CONTROL DEVICES

Install sound rated door gasketing and bottom seal, and adjust to obtain the specified sound rating.

3.6 INSTALLING WEATHERSTRIPPING AND SEALS

- A. Accurately cut and fit weatherstrips and seals. Carefully aligned for full contact and tight seal and secure firmly to maintain weatherproof,

waterproof, and lightproof seal without preventing smooth and easy operation of doors.

- B. Provide suitable blocking where necessary to clear hardware; and make adjustments as required to meet special conditions encountered.
- C. Prime paint wood surfaces which have been cut with wood sealer before weatherstrips are installed.

3.7 CLEANING AND ADJUSTING

- A. Adjust Doors, including hardware to operate as designed without binding or deformation of the members.
- B. After installation, clean surfaces, remove temporary labels, paint spots and other defacement.
- C. Clean prefinished and plated items and items fabricated from stainless steel, aluminum and copper alloys, as recommended by the manufacturer.

3.8 PROTECTION

- A. Protect doors and hardware from damage until completion of the project.
- B. Protective covering for wood doors is specified in Section, WOOD DOORS.

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