

latched by means of an automatic fail-safe device that is activated by an automatic fire detector. (See Section 4.7.)

6.4.4.4 Where both leaves are required for exit purposes, they shall be provided with labeled fire exit hardware.

6.4.4.4.1 Where permitted by the AHJ, pairs of doors not provided with an astragal shall be permitted to have labeled fire exit hardware and an open back strike installed on the inactive leaf, and either labeled fire exit hardware or any labeled latch capable of being opened by one obvious operation from the egress side installed on the active leaf.

6.4.4.5 Where a pair of doors is needed for the movement of equipment and where the inactive leaf of the pair of doors is not required for exit purposes, labeled, top and bottom, self-latching or automatic flush bolts, or labeled two-point latches shall be permitted.

6.4.4.5.1* Manually operated, labeled, top and bottom flush-mounted or surface-mounted bolts on the inactive leaf of a pair of doors shall be permitted to be used where acceptable to the AHJ, provided they do not pose a hazard to safety to life.

6.4.4.6 Throw.

6.4.4.6.1 The throw of single-point latch bolts shall not be less than the minimum shown on the fire door label.

6.4.4.6.2 The minimum throw shall be as specified in the manufacturer's installation instructions.

6.4.4.7 Door Attachments.

6.4.4.7.1 Locks, latches, surface-mounted top and bottom bolts, and fire exit hardware shall be secured to reinforcements in the doors with machine screws or shall be attached with through-bolts.

6.4.4.7.1.1 Pilot holes shall be drilled prior to lock and latch installation, in accordance with manufacturer's installation instructions.

6.4.4.7.2 Flush-mounted top and bottom bolts shall be secured to reinforcements in the doors with machine screws.

6.4.4.7.3 Locks and latches shall be attached to wood and plastic-covered composite doors or wood core doors with not less than No. 8, flat, threaded-to-the-head wood screws or shall be attached with through-bolts.

6.4.4.7.4 Fire exit hardware and surface-mounted top and bottom bolts shall be attached to wood and plastic-covered composite doors with through-bolts or with steel screws at locations specified in the door manufacturer's installation instructions.

6.4.4.8 Strike plates shall be secured to the frame with steel screws or other types of screws as indicated by the manufacturer's published listing or label service procedure.

6.4.4.9 Strike plates for doors swinging in pairs shall be secured to reinforcements in the inactive leaf with machine screws.

6.4.4.9.1 Pilot holes shall be drilled prior to strike plate installation, in accordance with manufacturer's installation instructions.

6.4.4.10* Open back strikes shall be permitted to be used in lieu of conventional strikes only where specifically provided for in the published listings.

6.4.4.11* Electric strikes shall be permitted to be used in lieu of conventional strikes in single swinging doors and pairs of doors where provided for in the published listings.

6.4.5 Protection Plates.

6.4.5.1 Factory-installed protection plates shall be labeled and installed in accordance with the listing of the door.

6.4.5.2 Field-installed protection plates shall be labeled and installed in accordance with their listing.

6.4.5.3 Labeling shall not be required where the top of the protection plate is not more than 16 in. (406 mm) above the bottom of the door.

6.4.6* Automatic Louvers. Only labeled fire door louvers shall be used in fire doors.

6.4.7* Astragals.

6.4.7.1 Doors swinging in pairs, where located within a means of egress, shall not be equipped with astragals that inhibit the free use of either leaf.

6.4.7.2* Pairs of doors that require astragals shall have at least one attached in place to project approximately $\frac{3}{4}$ in. (19 mm) or as otherwise indicated in the individual published listings.

6.4.8* Gasketing. Gasketing on fire doors or frames shall be in accordance with the published listings of the door, frame, or gasketing material manufacturer.

6.4.9 Thresholds. When used, thresholds shall be noncombustible or listed.

6.5 Application, Installation, and Adjustment.

6.5.1 General. The installation of all components of a fire door assembly shall be in accordance with the listing of each component.

6.5.2 Manufacturers' Instructions. All components shall be installed in accordance with the manufacturers' installation instructions and shall be adjusted to function as described in the listing.

6.5.3 Attachment. All components of a fire door assembly shall be attached firmly to walls, doors, and frames in a manner acceptable to the AHJ.

6.5.4 Mounting. All mounting screws, bolts, or shields shall be steel except where otherwise permitted by this standard.

6.5.5 Anchorage. Attachments to doors with composite cores shall provide firm anchorage for anticipated use.

Chapter 7 Swinging Doors with Fire Door Hardware

7.1 Doors.

7.1.1 General. This chapter shall cover the installation of swinging doors with fire door hardware.

7.1.2 Components. A fire door assembly shall consist of components that are separate products incorporated into the assembly.

7.1.3 Mounting of Doors.

7.1.3.1 Swinging tin-clad doors and flush- or corrugated-type sheet metal doors with fire door hardware shall be flush or lap mounted.

7.1.3.2 Flush-mounted doors shall be hung in steel channel frames securely anchored to the wall construction.

7.1.3.3 Lap-mounted doors shall be hung on the surface of the wall and shall lap the opening at least 4 in. (102 mm) at the top and on each side.

7.1.4 Operation of Doors.

7.1.4.1 The doors shall swing easily and freely on their hinges.

7.1.4.2 The latches shall operate freely.

7.2 Supporting Construction.

7.2.1 Walls.

7.2.1.1 Attachment of the door assembly to the wall shall be by means of through-wall bolts.

7.2.1.2 As an alternative, expansion anchors shall be permitted to be used as specified in 4.8.6.

7.2.2 Sills. Sills shall be installed in accordance with 4.8.2.

7.2.3 Reserved.

7.2.4 Vents.

7.2.4.1 Each tin-clad door formed of 14 in. × 20 in. (360 mm × 510 mm) sheets shall be provided with 3 in. (76.2 mm) diameter vent holes.

7.2.4.2 The vent holes shall be cut through the sheets on the face of the door to be provided with the fire door hardware, using care to avoid interference with the hardware or injury to the wood core when cutting the holes in the sheets.

7.2.4.3 The metal covering around the opening shall be secured with small nails spaced about 1 in. (25.4 mm) apart, and the exposed wood shall be painted thoroughly.

7.3 Openings.

7.3.1 Frames for Lap-Mounted Doors. Frames shall not be required for lap-mounted doors.

7.3.2* Frames for Flush-Mounted Doors.

7.3.2.1 Only labeled frames of the structural steel type shall be used for flush-mounted doors.

7.3.2.2 The frames shall be erected before the wall is built.

7.4 Assembly Components.

7.4.1* Closing Devices for Swinging Tin-Clad and Sheet Metal Fire Doors.

7.4.1.1 Swinging tin-clad and sheet metal fire doors shall be equipped with self-closing or automatic-closing devices to ensure that they are closed and latched at the time of fire.

7.4.1.2 Other arrangements acceptable to the AHJ shall be permitted.

7.4.2 Coordinating Devices.

7.4.2.1 Where there is an astragal or projecting latch bolt that prevents the inactive door of a pair of doors from closing and latching before the active door closes and latches, a coordinating device shall be used.

7.4.2.2 A coordinating device shall not be required where each door closes and latches independent of the other door.

7.4.3 Fire Door Hardware.

7.4.3.1 General.

7.4.3.1.1 Only labeled fire door hardware shall be used.

7.4.3.1.2 The design and construction of typical fire door hardware for swinging fire doors shall be as illustrated in ANSI/UL 14C, *Swing Hardware for Tin-Clad Fire Doors Mounted Singly and in Pairs*.

7.4.3.2 Components. Fire door hardware shall include hinge brackets, hinges, latches, latch keepers, and operating handle mechanisms, and hardware for an inactive door or pairs of doors shall include top and bottom bolts and keepers.

7.4.3.3* Hinges and Latches, Number and Length. The number and length of both the hinges and the latches shall be in accordance with the manufacturer's label service procedure and individual published listing.

7.4.3.4 Attaching Fire Door Hardware to Frames for Flush-Mounted Doors. Hinges and latch keepers shall be bolted, riveted, or welded to the frame.

7.4.3.5 Attaching of Wall Strips for Lap-Mounted Doors.

7.4.3.5.1 Hinges and latch keepers shall be mounted on wall strips bolted to or through the wall (*see* 7.2.1).

7.4.3.5.2 Bolts of not less than $\frac{3}{4}$ in. (19.05 mm) shall be used for attaching hinge wall strips, and bolts not less than $\frac{1}{2}$ in. (12.7 mm) shall be used for latch keeper wall strips.

Chapter 8 Horizontally Sliding Doors

8.1 Doors.

8.1.1 General. This chapter shall cover the installation of horizontally sliding doors.

8.1.2 Door Panels.

8.1.2.1 Door panels shall be permitted to be a single section or multiple sections.

8.1.2.2 Connection between the panels shall be in accordance with the manufacturer's instructions and the individual published listing.

8.1.2.3 Tin-clad and metal-clad (kalamein) doors shall not be furnished in more than two sections.

8.1.2.4 Hollow metal or composite doors shall be furnished in not more than five panels, constructed for either field or factory assembly.

8.1.2.5 For biparting doors, not more than four panels shall comprise a single leaf.