



GENERAL INFORMATION

Hinge Requirements for Fire Doors

National Fire Protection Association, pamphlet no. 80 (NFPA-80) lists the guidelines for hinge uses with fire doors.

2-8.1 Hinges.

2-8.1.1 Hinges shall be as required in Table 2-8A.

2-8.1.2 Attaching Hinges to Doors. Mortise hinges shall be secured to reinforcements in the doors with steel machine screws and surface hinges shall be attached with steel through-bolts.

Exception: Mortise hinges shall be secured to wood and plastic covered composite or wood core doors with No. 12 by 1 1/4 in. (31.75 mm) flat threaded-to-the-head, steel wood screws.

2-8.1.3 Attaching Hinges to Frame. Hinges shall be secured to frames with steel screws. Types of screws will vary depending on material used for the manufacture of labeled door frames. Refer to labeled door frame manufacturers instructions and published listings for specific screw requirements.

14-2.1.1 Hardware shall be examined frequently and any parts found to be inoperative shall be replaced immediately.

Table 2-8A Builders Hardware

Mortise and surface hinges for swinging doors including spring hinges.

Doors up to 60 in. (1.52 m) in height shall be provided with two hinges and an additional hinge for each additional 30 in. (0.762 m) of door height or fraction thereof. The distance between hinges may exceed 30 in. (0.762 m).

Door rating, Hr						For 1 3/4 in. (44.5 mm) or thicker doors				Type Hinge
						Maximum door size		Minimum hinges size		
						Width ft (m)	Height ft (m)	Height in. (mm)	Thickness in. (mm)	
3	1 1/2	1	3/4	1/2	1/3	4 (1.22)	10 (3.05)	4 1/2 (114.3)	0.180 (4.57)	Steel, Mortise or Surface
	3	1 1/2	1	3/4	1/2	1/3	4 (1.22)	8 (2.44)	4 1/2 (114.3)	
	1 1/2	1	3/4	1/2	1/3	3 (0.91)	5 (1.52)	4 (101.6)	0.130 (3.30)	
	1 1/2	1	3/4	1/2	1/3	2 (0.61)	3 (0.91)	3 (76.2)	0.092 (2.34)	
3	1 1/2		3/4	1/2	1/3	For 1 3/8 in. (34.93 mm) Doors				
						3 (0.91)	7 (2.13)	3 1/2 (88.9)	0.123 (3.12)	

Note 1 : All hinges except spring hinges, shall be of the ball bearing type. Hinges employing other antifriction bearing surfaces are permitted if they meet the test requirements of standard for butts and hinges (ANSI A 156.1).

Note 2 : 4 1/2 in. (114 mm) high, 0.180 in. (4.57 mm) thick hinges should be used on doors which are unusually wide and heavy or which will receive high frequency use or unusual stresses.

Note 3 : Some manufacturers may provide fire doors with hinges of lighter weight which are not ball bearing when they are part of a listed assembly and meet the test requirements of ANSI A 156.1 and have been tested to a minimum of 350,000 cycles.