

# FIRE AND SMOKE PROTECTION FEATURES

**TABLE 722.5.1(7)**  
**MINIMUM COVER (inch) FOR STEEL COLUMNS ENCASED IN**  
**NORMAL-WEIGHT CONCRETE<sup>a</sup> [FIGURE 722.5.1(6)(c)]**

STRUCTURAL SHAPE	FIRE-RESISTANCE RATING (hours)					
	1	1½	2	3	4	
W14 × 233	1	1	1	1½	2	
× 176				2	2½	
× 132			2			
× 90				1½		2½
× 61						
× 48						
× 43						
W12 × 152	1	1	1	2	2½	
× 96		1½	1½	2½	3	
× 65						
× 50						
× 40						
W10 × 88	1	1½	1½	2	3	
× 49	1			2½		3½
× 45						
× 39						
× 33						
W8 × 67	1	1	1½	2½	3	
× 58		1½	2	3	3½	
× 48						
× 31						
× 21						
× 18						
W6 × 25	1	1½	2	3	3½	
× 20		2	2½	3½	4	
× 16						
× 15						
× 9						

For SI: 1 inch = 25.4 mm.

a. The tabulated thicknesses are based on the assumed properties of normal-weight concrete given in Table 722.5.1(2).

**TABLE 722.5.1(8)**  
**MINIMUM COVER (inch) FOR STEEL COLUMNS**  
**ENCASED IN STRUCTURAL LIGHTWEIGHT CONCRETE<sup>a</sup>**  
**[FIGURE 722.5.1(6)(c)]**

STRUCTURAL SHAPE	FIRE-RESISTANCE RATING (HOURS)				
	1	1½	2	3	4
W14 × 233	1	1	1	1	1½
× 193				1½	2
× 74					
× 61			1½	2	2½
× 43				2	2½
W12 × 65	1	1	1	1½	2
× 53			1½	2	2½
× 40				2	2½
W10 × 112	1	1	1	1½	2
× 88				2	2½
× 60					
× 33			1½	2	2½
W8 × 35	1	1	1½	2	2½
× 28				2½	3
× 24					
× 18		1½			

For SI: 1 inch = 25.4 mm.

a. The tabulated thicknesses are based on the assumed properties of structural lightweight concrete given in Table 722.5.1(2).