

Prescriptive Fire-Resistance-Rated Assemblies

Fire-resistance of certain wood assemblies is prescribed in Section 721 based on testing using ASTM E 119 or UL 263

TABLE 721.1(2)—continued
RATED FIRE-RESISTANCE PERIODS FOR VARIOUS WALLS AND PARTITIONS ***

MATERIAL	ITEM NUMBER	CONSTRUCTION	MINIMUM FINISHED THICKNESS FACE-TO-FACE ^b (inches)			
			4 hours	3 hours	2 hours	1 hour
14. Wood studs-interior partition with gypsum wallboard each side	14-1.1 ^a	2" x 4" wood studs 16" on center with two layers of 1/2" regular gypsum wallboard ^c each side. 6d cooler ^d or wallboard ^e nails at 8" on center first layer, 5d cooler ^d or wallboard ^e nails at 8" on center second layer with laminating constraint	—	—	—	5
	14-1.2 ^a	2" x 4" wood studs 16" on center with two layers 1/2" regular gypsum wallboard ^c applied vertically or horizontally each side ^b . Joints staggered. Nail base layer with 5d cooler ^d or wallboard ^e nails at 8" on center face layer with 6d cooler ^d or wallboard ^e nails at 8" on center.	—	—	—	5 1/2
	14-1.3 ^a	2" x 4" wood studs 24" on center with 1/2" Type X gypsum wallboard ^c applied vertically or horizontally nailed with 6d cooler ^d or wallboard ^e nails at 7" on center with end joints on nailing members. Stagger joints each side.	—	—	—	4 1/4
	14-1.4 ^a	2" x 4" fire-retardant-treated wood studs spaced 24" on center with one layer of 1/2" Type X gypsum wallboard ^c applied with face paper grain (long dimension) parallel to studs. Wallboard attached with 6d cooler ^d or wallboard ^e nails at 7" on center.	—	—	—	4 1/4 ^d

m. For studs with a slenderness ratio, l/d , greater than 33, the design stress shall be reduced to 78 percent of allowable F_c . For studs with a slenderness ratio, l/d , not exceeding 33, the design stress shall be reduced to 78 percent of the adjusted stress F_c , calculated for studs having a slenderness ratio l/d of 33.

Calculated Resistance (703.3)

- Fire-resistance of wood frame assemblies also may be calculated based on the known fire-resistance of the components, using the provisions of Section 722.6
- 1.0 hour maximum

722.6 Wood assemblies. The provisions of this section contain procedures by which the *fire-resistance ratings* of wood assemblies are established by calculations.