

**722.5.2.3 Structural steel trusses.** The *fire resistance* of structural steel trusses protected with fire-resistant materials sprayed to each of the individual truss elements shall be permitted to be determined in accordance with this section. The thickness of the fire-resistant material shall be determined in accordance with Section 722.5.1.3. The weight-to-heated-perimeter ratio ( $W/D$ ) of truss elements that can be simultaneously exposed to fire on all sides shall be determined on the same basis as columns, as specified in Section 722.5.1.1. The weight-to-heated-perimeter ratio ( $W/D$ ) of truss elements that directly support floor or roof assembly shall be determined on the same basis as beams and girders, as specified in Section 722.5.2.1.

The *fire resistance* of structural steel trusses protected with intumescent or mastic fire-resistant coatings shall be determined on the basis of *fire-resistance* tests in accordance with Section 703.2.

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

**722.6.1 General.** This section contains procedures for calculating the *fire-resistance ratings* of walls, floor/ceiling and roof/ceiling assemblies based in part on the standard method of testing referenced in Section 703.2.

**722.6.1.1 Maximum fire-resistance rating.** *Fire-resistance ratings* calculated for assemblies using the methods in Section 722.6 shall be limited to not more than 1 hour.

**722.6.1.2 Dissimilar membranes.** Where dissimilar membranes are used on a wall assembly that requires consideration of fire exposure from both sides, the calculation shall be made from the least fire-resistant (weaker) side.

**722.6.2 Walls, floors and roofs.** These procedures apply to both load-bearing and nonload-bearing assemblies.

**722.6.2.1 Fire-resistance rating of wood frame assemblies.** The *fire-resistance rating* of a wood frame assembly is equal to the sum of the time assigned to the membrane on the fire-exposed side, the time assigned to the framing members and the time assigned for additional contribution by other protective measures such as insulation. The membrane on the unexposed side shall not be included in determining the *fire resistance* of the assembly.

**722.6.2.2 Time assigned to membranes.** Table 722.6.2(1) indicates the time assigned to membranes on the fire-exposed side.

**722.6.2.3 Exterior walls.** For an exterior wall with a *fire separation distance* greater than 10 feet (3048 mm), the wall is assigned a rating dependent on the interior membrane and the framing as described in Tables 722.6.2(1) and 722.6.2(2). The membrane on the outside of the nonfire-exposed side of exterior walls with a *fire separation distance* greater than 10 feet (3048 mm) shall consist of sheathing, sheathing paper and siding as described in Table 722.6.2(3).

**722.6.2.4 Floors and roofs.** In the case of a floor or roof, the standard test provides only for testing for fire exposure from below. Except as noted in Section 703.3, Item 5, floor or roof assemblies of wood framing shall have an upper membrane consisting of a sub-floor and finished floor conforming to Table 722.6.2(4) or any other membrane that has a contribution to *fire resistance* of not less than 15 minutes in Table 722.6.2(1).

**722.6.2.5 Additional protection.** Table 722.6.2(5) indicates the time increments to be added to the *fire resistance* where glass fiber, rockwool, slag *mineral wool* or cellulose insulation is incorporated in the assembly.

**722.6.2.6 Fastening.** Fastening of wood frame assemblies and the fastening of membranes to the wood framing members shall be done in accordance with Chapter 23.