

2021 Virginia Construction Code

CHAPTER 7 FIRE AND SMOKE PROTECTION FEATURES

SECTION 711 FLOOR AND ROOF ASSEMBLIES

711.1 General.

Horizontal assemblies shall comply with [Section 711.2](#). Nonfire-resistance-rated floor and *roof assemblies* shall comply with [Section 711.3](#).

711.2 Horizontal assemblies.

Horizontal assemblies shall comply with [Sections 711.2.1](#) through [711.2.6](#).

711.2.1 Materials.

Assemblies shall be of materials permitted by the building type of construction.

711.2.2 Continuity.

Assemblies shall be continuous without vertical openings, except as permitted by this section and [Section 712](#).

711.2.3 Supporting construction.

The supporting construction shall be protected to afford the required *fire-resistance rating* of the *horizontal assembly* supported.

Exception: In buildings of Type IIB, IIIB or VB construction, the construction supporting the *horizontal assembly* is not required to be fire-resistance rated at the following:

1. *Horizontal assemblies* at the separations of incidental uses as specified by [Table 509.1](#) provided that the required *fire-resistance rating* does not exceed 1 hour.
2. *Horizontal assemblies* at the separations of *dwelling units* and *sleeping units* as required by [Section 420.3](#).
3. *Horizontal assemblies* at *smoke barriers* constructed in accordance with [Section 709](#).

711.2.4 Fire-resistance rating.

The *fire-resistance rating* of *horizontal assemblies* shall comply with [Sections 711.2.4.1](#) through [711.2.4.6](#) but shall be not less than that required by the building type of construction.

711.2.4.1 Separating mixed occupancies.

Where the *horizontal assembly* separates mixed occupancies, the assembly shall have a *fire-resistance rating* of not less than that required by [Section 508.4](#) based on the occupancies being separated.

711.2.4.2 Separating fire areas.

Where the *horizontal assembly* separates a single occupancy into different *fire areas*, the assembly shall have a *fire-resistance rating* of not less than that required by [Section 707.3.10](#).

711.2.4.3 Dwelling units and sleeping units.

Horizontal assemblies serving as *dwelling* or *sleeping unit* separations in accordance with [Section 420.3](#) shall be not less than 1-hour *fire-resistance-rated* construction.

Exception: *Horizontal assemblies* separating *dwelling units* and *sleeping units* shall be not less than $1\frac{1}{2}$ -hour fire-resistance-rated construction in a building of Types IIB, IIIB and VB construction, where the building is equipped throughout with an *automatic sprinkler system* in accordance with [Section 903.3.1.1](#).

711.2.4.4 Separating smoke compartments.

Where the *horizontal assembly* is required to be a *smoke barrier*, the assembly shall comply with [Section 709](#).

711.2.4.5 Separating incidental uses.

Where the *horizontal assembly* separates incidental uses from the remainder of the building, the assembly shall have a *fire-resistance rating* of not less than that required by [Section 509](#).

711.2.4.6 Other separations.

Where a *horizontal assembly* is required by other sections of this code, the assembly shall have a *fire-resistance rating* of not less than that required by that section.

711.2.5 Ceiling panels.

Where the weight of lay-in ceiling panels, used as part of fire-resistance-rated floor/ceiling or roof/ceiling assemblies, is not adequate to resist an upward force of 1 pound per square foot (48 Pa), wire or other *approved devices* shall be installed above the panels to prevent vertical displacement under such upward force.

711.2.6 Unusable space.

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In 1-hour fire-resistance-rated floor/ceiling assemblies, the ceiling membrane is not required to be installed over unusable crawl spaces. In 1-hour fire-resistance-rated roof assemblies, the floor membrane is not required to be installed where unusable attic space occurs above.

711.3 Nonfire-resistance-rated floor and roof assemblies.

Nonfire-resistance-rated floor, floor/ceiling, roof and roof/ceiling assemblies shall comply with [Sections 711.3.1](#) and [711.3.2](#).

711.3.1 Materials.

Assemblies shall be of materials permitted by the building type of construction.

711.3.2 Continuity.

Assemblies shall be continuous without vertical openings, except as permitted by [Section 712](#).