

2021 Virginia Construction Code

CHAPTER 5 GENERAL BUILDING HEIGHTS AND AREAS

SECTION 510 SPECIAL PROVISIONS

510.1 General.

The provisions in [Sections 510.2 through 510.9](#) shall permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable *building heights and areas* of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in this section for such condition and other applicable requirements of this code. The provisions of [Sections 510.2 through 510.8](#) are to be considered independent and separate from each other.

510.2 Horizontal building separation allowance.

A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours. Where vertical offsets are provided as part of a *horizontal assembly*, the vertical offset and the structure supporting the vertical offset shall have a *fire-resistance rating* of not less than 3 hours.
2. The building below, including the *horizontal assembly*, is of Type IA construction.
3. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with [Section 716](#).

Exception: Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with [Section 716](#), the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided [that the following conditions are met](#):

1. The building above the *horizontal assembly* is not required to be of Type I construction.
 2. The enclosure connects fewer than four stories.
 3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. [Interior exit stairways](#) located within the Type IA building are permitted to be of combustible materials where the following requirements are met:
 - 4.1. The building above the Type IA building is of Type III, IV, or V construction.
 - 4.2. The *stairway* located in the Type IA building is enclosed by 3-hour *fire-resistance-rated construction with opening protectives in accordance with Section 716*.
 5. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less than 300, or Group B, M, R or S occupancies.
 6. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with [Section 903.3.1.1](#), and shall be permitted to be any occupancy allowed by this code except Group H.
 7. The maximum *building height* in feet (mm) shall not exceed the limits set forth in [Section 504.3](#) for the building having the smaller allowable height as measured from the *grade plane*.

510.3 Group S-2 enclosed parking garage with Group S-2 open parking garage above.

A Group S-2 enclosed parking garage with not more than one *story above grade plane* and located below a Group S-2 *open parking garage* shall be classified as a separate and distinct building for the purpose of determining the type of construction where the following conditions are met:

1. The allowable area of the building shall be such that the sum of the ratios of the actual area divided by the allowable area for each separate occupancy shall not exceed 1.
2. The Group S-2 enclosed parking garage is of Type I or II construction and is at least equal to the *fire-resistance* requirements of the Group S-2 *open parking garage*.
3. The height and the number of tiers of the Group S-2 *open parking garage* shall be limited as specified in [Table 406.5.4](#).
4. The floor assembly separating the Group S-2 enclosed parking garage and Group S-2 *open parking garage* shall be protected as required for the floor assembly of the Group S-2 enclosed parking garage. Openings between the Group S-2 enclosed parking garage and Group S-2 *open parking garage*, except exit openings, shall not be required to be protected.
5. The Group S-2 enclosed parking garage is used exclusively for the parking or storage of private motor vehicles,

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but shall be permitted to contain an office, waiting room and toilet room having a total area of not more than 1,000 square feet (93 m²) and mechanical equipment rooms associated with the operation of the building.

510.4 Parking beneath Group R.

Where a maximum one *story above grade plane* Group S-2 parking garage, enclosed or open, or combination thereof, of Type I construction or open of Type IV construction, with grade entrance, is provided under a building of Group R, the number of *stories* to be used in determining the minimum type of construction shall be measured from the floor above such a parking area. The floor assembly between the parking garage and the Group R above shall comply with the type of construction required for the parking garage and shall also provide a *fire-resistance rating* not less than the mixed occupancy separation required in [Section 508.4](#).

510.5 Group R-1 and R-2 buildings of Type IIIA construction.

For buildings of Type IIIA construction in Groups R-1 and R-2, the maximum allowable height in [Table 504.3](#) shall be increased by 10 feet (3048 mm) and the maximum allowable number of stories in [Table 504.4](#) shall be increased by one where the first-floor assembly above the *basement* has a *fire-resistance rating* of not less than 3 hours and the floor area is subdivided by 2-hour fire-resistance-rated *fire walls* into areas of not more than 3,000 square feet (279 m²).

510.6 Group R-1 and R-2 buildings of Type IIA construction.

The height limitation for buildings of Type IIA construction in Groups R-1 and R-2 shall be increased to nine *stories* and 100 feet (30 480 mm) where the building is separated by not less than 50 feet (15 240 mm) from any other building on the *lot* and from *lot lines*, the *exits* are segregated in an area enclosed by a 2-hour fire-resistance-rated *fire wall* and the first floor assembly has a *fire-resistance rating* of not less than 1½ hours.

510.7 Open parking garage beneath Groups A, I, B, M and R.

Open parking garages constructed under Groups A, I, B, M and R shall not exceed the height and area limitations permitted under [Section 406.5](#). The height and area of the portion of the building above the *open parking garage* shall not exceed the limitations in [Section 503](#) for the upper occupancy. The height, in both feet and *stories*, of the portion of the building above the *open parking garage* shall be measured from *grade plane* and shall include both the *open parking garage* and the portion of the building above the parking garage.

510.7.1 Fire separation.

Fire barriers constructed in accordance with [Section 707](#) or *horizontal assemblies* constructed in accordance with [Section 711](#) between the parking occupancy and the upper occupancy shall correspond to the required *fire-resistance rating* prescribed in [Table 508.4](#) for the uses involved. The type of construction shall apply to each occupancy individually, except that structural members, including main bracing within the open parking structure, which is necessary to support the upper occupancy, shall be protected with the more restrictive fire-resistance-rated assemblies of the groups involved as shown in [Table 601](#). *Means of egress* for the upper occupancy shall conform to [Chapter 10](#) and shall be separated from the parking occupancy by *fire barriers* having not less than a 2-hour *fire-resistance rating* as required by [Section 707](#) with *self-closing doors* complying with [Section 716](#) or *horizontal assemblies* having not less than a 2-hour *fire-resistance rating* as required by [Section 711](#), with *self-closing doors* complying with [Section 716](#). *Means of egress* from the *open parking garage* shall comply with [Section 406.5](#).

510.8 Group B or M buildings with Group S-2 open parking garage above.

Group B or M occupancies located below a Group S-2 *open parking garage* of a lesser type of construction shall be considered as a separate and distinct building from the Group S-2 *open parking garage* for the purpose of determining the type of construction where the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 2 hours.
2. The occupancies in the building below the *horizontal assembly* are limited to Groups B and M.
3. The occupancy above the *horizontal assembly* is limited to a Group S-2 *open parking garage*.
4. The building below the *horizontal assembly* is of Type IA construction.

Exception: The building below the *horizontal assembly* shall be permitted to be of Type IB or II construction, but not less than the type of construction required for the Group S-2 *open parking garage* above, where the building below is not greater than one *story* in height above *grade plane*.

5. The height and area of the building below the *horizontal assembly* does not exceed the limits set forth in [Section 503](#).
6. The height and area of the Group S-2 *open parking garage* does not exceed the limits set forth in [Section 406.5](#). The height, in both feet and *stories*, of the Group S-2 *open parking garage* shall be measured from *grade plane* and shall include the building below the *horizontal assembly*.
7. *Exits* serving the Group S-2 *open parking garage* shall [discharge at grade with direct and unobstructed access](#) to a street or *public way* and are separated from the building below the *horizontal assembly* by 2-hour *fire barriers* constructed in accordance with [Section 707](#) or 2-hour *horizontal assemblies* constructed in accordance with [Section](#)

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711, or both.

510.9 Multiple buildings above a horizontal assembly.

Where two or more buildings are provided above the *horizontal assembly* separating a Group S-2 parking garage or building below from the buildings above in accordance with the special provisions in [Section 510.2](#), [510.3](#) or [510.8](#), the buildings above the *horizontal assembly* shall be regarded as separate and distinct buildings from each other and shall comply with all other provisions of this code as applicable to each separate and distinct building.