

2021 Virginia Construction Code

CHAPTER 4 SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

SECTION 410 STAGES, PLATFORMS AND TECHNICAL PRODUCTION AREAS

410.1 Applicability.

The provisions of [Sections 410.1](#) through [410.7](#) shall apply to all parts of buildings and structures that contain *stages* or *platforms* and similar appurtenances as herein defined.

410.2 Stages.

Stage construction shall comply with [Sections 410.2.1](#) through [410.2.7](#).

410.2.1 Stage construction.

Stages shall be constructed of materials as required for floors for the type of construction of the building in which such *stages* are located.

Exception: *Stages* need not be constructed of the same materials as required for the type of construction provided that the construction complies with one of the following:

1. *Stages* of Type IIB or IV construction with a nominal 2-inch (51 mm) wood deck, provided that the *stage* is separated from other areas in accordance with [Section 410.2.4](#).
2. In buildings of Type IIA, IIIA and VA construction, a fire-resistance-rated floor is not required, provided that the space below the *stage* is equipped with an *automatic sprinkler system* or *fire-extinguishing system* in accordance with [Section 903](#) or [904](#).
3. In all types of construction, the finished floor shall be constructed of wood or *approved* noncombustible materials. Openings through stage floors shall be equipped with tight-fitting, solid wood trap doors with *approved* safety locks.

410.2.1.1 Stage height and area.

Stage areas shall be measured to include the entire performance area and adjacent backstage and support areas not separated from the performance area by fire-resistance-rated construction. *Stage* height shall be measured from the lowest point on the *stage* floor to the highest point of the roof or floor deck above the *stage*.

410.2.2 Technical production areas: galleries, gridirons and catwalks.

Beams designed only for the attachment of portable or fixed theater equipment, gridirons, galleries and catwalks shall be constructed of *approved* materials consistent with the requirements for the type of construction of the building; and a *fire-resistance rating* shall not be required. These areas shall not be considered to be floors, *stories*, *mezzanines* or levels in applying this code.

Exception: Floors of fly galleries and catwalks shall be constructed of any *approved* material.

410.2.3 Exterior stage doors.

Where protection of openings is required, exterior *exit* doors shall be protected with *fire door assemblies* that comply with [Section 716](#). Exterior openings that are located on the *stage* for *means of egress* or loading and unloading purposes, and that are likely to be open during occupancy of the theater, shall be constructed with vestibules to prevent air drafts into the auditorium.

410.2.4 Proscenium wall.

Where the *stage* height is greater than 50 feet (15 240 mm), all portions of the *stage* shall be completely separated from the seating area by a *proscenium wall* with not less than a 2-hour *fire-resistance rating* extending continuously from the foundation to the roof.

410.2.5 Proscenium curtain.

Where a *proscenium wall* is required to have a *fire-resistance rating*, the *stage* opening shall be provided with a fire curtain complying with [NFPA 80](#), horizontal sliding doors complying with [Section 716](#) having a *fire protection rating* of not less than 1 hour, or an *approved* water curtain complying with [Section 903.3.1.1](#) or, in facilities not utilizing the provisions of *smoke-protected assembly seating* in accordance with [Section 1030.6.2](#), a smoke control system complying with [Section 909](#) or natural *ventilation* designed to maintain the smoke level not less than 6 feet (1829 mm) above the floor of the *means of egress*.

410.2.6 Scenery.

Combustible materials used in sets and scenery shall meet the fire propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of [NFPA 701](#), in accordance with [Section 806](#) and the *International Fire Code*. Foam plastics and materials containing foam plastics shall comply with [Section 2603](#) and the *International Fire Code*.

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410.2.7 Stage ventilation.

Emergency *ventilation* shall be provided for *stages* larger than 1,000 square feet (93 m²) in floor area, or with a *stage* height greater than 50 feet (15 240 mm). Such *ventilation* shall comply with [Section 410.2.7.1](#) or [410.2.7.2](#).

410.2.7.1 Roof vents.

Two or more vents constructed to open automatically by *approved* heat-activated devices and with an aggregate clear opening area of not less than 5 percent of the area of the *stage* shall be located near the center and above the highest part of the *stage area*. Supplemental means shall be provided for manual operation of the ventilator. Curbs shall be provided as required for skylights in [Section 2610.2](#). Vents shall be *labeled*.

[F] 410.2.7.2 Smoke control.

Smoke control in accordance with [Section 909](#) shall be provided to maintain the smoke layer interface not less than 6 feet (1829 mm) above the highest level of the assembly seating or above the top of the proscenium opening where a *proscenium wall* is provided in compliance with [Section 410.2.4](#).

410.3 Platform construction.

Permanent *platforms* shall be constructed of materials as required for the type of construction of the building in which the permanent *platform* is located. Permanent *platforms* are permitted to be constructed of *fire-retardant-treated wood* for Types I, II and IV construction where the *platforms* are not more than 30 inches (762 mm) above the main floor, and not more than one-third of the room floor area and not more than 3,000 square feet (279 m²) in area. Where the space beneath the permanent *platform* is used for storage or any purpose other than equipment, wiring or plumbing, the floor assembly shall be not less than 1-hour fire-resistance-rated construction. Where the space beneath the permanent *platform* is used only for equipment, wiring or plumbing, the underside of the permanent *platform* need not be protected.

410.3.1 Temporary platforms.

Platforms installed for a period of not more than 30 days are permitted to be constructed of any materials permitted by this code. The space between the floor and the *platform* above shall only be used for plumbing and electrical wiring to *platform* equipment.

410.4 Dressing and appurtenant rooms.

Dressing and appurtenant rooms shall comply with [Sections 410.4.1](#) and [410.4.2](#).

410.4.1 Separation from stage.

The *stage* shall be separated from dressing rooms, scene docks, property rooms, workshops, storerooms and compartments appurtenant to the *stage* and other parts of the building by *fire barriers* constructed in accordance with [Section 707](#) or *horizontal assemblies* constructed in accordance with [Section 711](#), or both. The *fire-resistance rating* shall be not less than 2 hours for *stage* heights greater than 50 feet (15 240 mm) and not less than 1 hour for *stage* heights of 50 feet (15 240 mm) or less.

410.4.2 Separation from each other.

Dressing rooms, scene docks, property rooms, workshops, storerooms and compartments appurtenant to the *stage* shall be separated from each other by not less than 1-hour *fire barriers* constructed in accordance with [Section 707](#) or *horizontal assemblies* constructed in accordance with [Section 711](#), or both.

410.5 Means of egress.

Except as modified or as provided for in this section, the provisions of [Chapter 10](#) shall apply.

410.5.1 Arrangement.

Where two or more *exits* or *exit access doorways* from the *stage* are required in accordance with [Section 1006.2](#), not fewer than one *exit* or *exit access doorway* shall be provided on each side of a *stage*.

410.5.2 Stairway and ramp enclosure.

Exit access stairways and *ramps* serving a *stage* or *platform* are not required to be enclosed. *Exit access stairways* and *ramps* serving *technical production areas* are not required to be enclosed.

410.5.3 Technical production areas.

Technical production areas shall be provided with *means of egress* and means of escape in accordance with [Sections 410.5.3.1](#) through [410.5.3.5](#).

410.5.3.1 Number of means of egress.

Not fewer than one *means of egress* shall be provided from *technical production areas*.

410.5.3.2 Exit access travel distance.

The *exit access* travel distance shall be not greater than 300 feet (91 440 mm) for buildings without a sprinkler system and 400 feet (122 mm) for buildings equipped throughout with an *automatic sprinkler system* in accordance with [Section 903.3.1.1](#).

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410.5.3.3 Two means of egress.

Where two *means of egress* are required, the *common path of travel* shall be not greater than 100 feet (30 480 mm).

Exception: A means of escape to a roof in place of a second *means of egress* is permitted.

410.5.3.4 Path of egress travel.

The following *exit access* components are permitted where serving *technical production areas*:

1. *Stairways*.
2. *Ramps*.
3. *Spiral stairways*.
4. *Catwalks*.
5. *Alternating tread devices*.
6. Permanent ladders.

410.5.3.5 Width.

The path of egress travel within and from technical support areas shall be not less than 22 inches (559 mm).

[F] 410.6 Automatic sprinkler system.

Stages shall be equipped with an *automatic sprinkler system* in accordance with [Section 903.3.1.1](#). Sprinklers shall be installed under the roof and gridiron and under all catwalks and galleries over the *stage*. Sprinklers shall be installed in dressing rooms, performer lounges, shops and storerooms accessory to such *stages*.

Exceptions:

1. Sprinklers are not required under *stage* areas less than 4 feet (1219 mm) in clear height that are utilized exclusively for storage of tables and chairs, provided that the concealed space is separated from the adjacent spaces by Type X *gypsum board* not less than $\frac{5}{8}$ -inch (15.9 mm) in thickness.
2. Sprinklers are not required for *stages* 1,000 square feet (93 m²) or less in area and 50 feet (15 240 mm) or less in height where curtains, scenery or other combustible hangings are not retractable vertically. Combustible hangings shall be limited to a single main curtain, borders, legs and a single backdrop.
3. Sprinklers are not required within portable orchestra enclosures on *stages*.

[F] 410.7 Standpipes.

Standpipe systems shall be provided in accordance with [Section 905](#).