

# 2021 Virginia Construction Code

## CHAPTER 7 FIRE AND SMOKE PROTECTION FEATURES

### SECTION 718 CONCEALED SPACES

#### 718.1 General.

*Fireblocking* and draftstopping shall be installed in combustible concealed locations in accordance with this section. *Fireblocking* shall comply with [Section 718.2](#). Draftstopping in floor/ceiling spaces and attic spaces shall comply with [Sections 718.3](#) and [718.4](#), respectively. The permitted use of combustible materials in concealed spaces of buildings of Type I or II construction shall be limited to the applications indicated in [Section 718.5](#).

#### 718.2 Fireblocking.

In combustible construction, *fireblocking* shall be installed to cut off concealed draft openings (both vertical and horizontal) and shall form an effective barrier between floors, between a top story and a roof or attic space. *Fireblocking* shall be installed in the locations specified in [Sections 718.2.2](#) through [718.2.7](#).

##### 718.2.1 Fireblocking materials.

*Fireblocking* shall consist of the following materials:

1. Two-inch (51 mm) nominal lumber.
2. Two thicknesses of 1-inch (25 mm) nominal lumber with broken lap joints.
3. One thickness of 0.719-inch (18.3 mm) *wood structural panels* with joints backed by 0.719-inch (18.3 mm) *wood structural panels*.
4. One thickness of 0.75-inch (19.1 mm) *particleboard* with joints backed by 0.75-inch (19 mm) *particleboard*.
5. One-half-inch (12.7 mm) *gypsum board*.
6. One-fourth-inch (6.4 mm) cement-based millboard.
7. Batts or blankets of *mineral wool*, *mineral fiber* or other *approved* materials installed in such a manner as to be securely retained in place.
8. Cellulose insulation [tested in the form and manner intended for use to demonstrate its ability to remain in place and to retard the spread of fire and hot gases](#).
9. *Mass timber* complying with [Section 2304.11](#).

##### 718.2.1.1 Batts or blankets of mineral wool or mineral fiber.

Batts or blankets of *mineral wool* or *mineral fiber* or other *approved* nonrigid materials shall be permitted for compliance with the 10-foot (3048 mm) horizontal *fireblocking* in walls constructed using parallel rows of studs or staggered studs.

##### 718.2.1.2 Unfaced fiberglass.

Unfaced fiberglass batt insulation used as *fireblocking* shall fill the entire cross section of the wall cavity to a minimum height of 16 inches (406 mm) measured vertically. Where piping, conduit or similar obstructions are encountered, the insulation shall be packed tightly around the obstruction.

##### 718.2.1.3 Loose-fill insulation material.

Loose-fill insulation material, insulating foam sealants and caulk materials shall not be used as a fireblock unless specifically tested in the form and manner intended for use to demonstrate its ability to remain in place and to retard the spread of fire and hot gases.

##### 718.2.1.4 Fireblocking integrity.

The integrity of fireblocks shall be maintained.

##### 718.2.1.5 Double stud walls.

Batts or blankets of mineral or glass fiber or other *approved* nonrigid materials shall be allowed as *fireblocking* in walls constructed using parallel rows of studs or staggered studs.

#### 718.2.2 Concealed wall spaces.

*Fireblocking* shall be provided in concealed spaces of stud walls and partitions, including furred spaces, and parallel rows of studs or staggered studs, as follows:

1. Vertically at the ceiling and floor levels.
2. Horizontally at intervals not exceeding 10 feet (3048 mm).

#### 718.2.3 Connections between horizontal and vertical spaces.

*Fireblocking* shall be provided at interconnections between concealed vertical stud wall or partition spaces and concealed horizontal spaces created by an assembly of floor joists or trusses, and between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings, cove ceilings and similar locations.

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#### 718.2.4 Stairways.

*Fireblocking* shall be provided in concealed spaces between *stair* stringers at the top and bottom of the run. Enclosed spaces under *stairways* shall comply with [Section 1011.7.3](#).

#### 718.2.5 Ceiling and floor openings.

Where required by [Section 712.1.8](#), Exception 1 of [Section 714.5.1.2](#) or [Section 714.6](#), *fireblocking* of the *annular space* around vents, pipes, ducts, chimneys and fireplaces at ceilings and floor levels shall be installed with a material specifically tested in the form and manner intended for use to demonstrate its ability to remain in place and resist the free passage of flame and the products of combustion.

##### 718.2.5.1 Factory-built chimneys and fireplaces.

Factory-built chimneys and fireplaces shall be fireblocked in accordance with [UL 103](#) and [UL 127](#).

#### 718.2.6 Exterior wall coverings.

*Fireblocking* shall be installed within concealed spaces of *exterior wall coverings* and other exterior architectural elements where permitted to be of combustible construction as specified in [Section 1405](#) or where erected with combustible frames. *Fireblocking* shall be installed at maximum intervals of 20 feet (6096 mm) in either dimension so that there will be no concealed space exceeding 100 square feet (9.3 m<sup>2</sup>) between *fireblocking*. Where wood furring strips are used, they shall be of *approved* wood of natural decay resistance or *preservative-treated wood*. If noncontinuous, such elements shall have closed ends, with not less than 4 inches (102 mm) of separation between sections.

##### Exceptions:

1. *Fireblocking* of *cornices* is not required in single-family *dwelling*s. *Fireblocking* of *cornices* of a two-family *dwelling* is required only at the line of *dwelling unit* separation.
2. *Fireblocking* shall not be required where the *exterior wall covering* is installed on noncombustible framing and the face of the *exterior wall covering* exposed to the concealed space is covered by one of the following materials:
  - 2.1. Aluminum having a minimum thickness of 0.019 inch (0.5 mm).
  - 2.2. Corrosion-resistant steel having a base metal thickness not less than 0.016 inch (0.4 mm) at any point.
  - 2.3. Other *approved* noncombustible materials.
3. *Fireblocking* shall not be required where the *exterior wall covering* has been tested in accordance with, and complies with the acceptance criteria of, [NFPA 285](#). The *exterior wall covering* shall be installed as tested in accordance with [NFPA 285](#).

#### 718.2.7 Concealed sleeper spaces.

Where wood sleepers are used for laying wood flooring on masonry or concrete fire-resistance-rated floors, the space between the floor slab and the underside of the wood flooring shall be filled with an *approved* material to resist the free passage of flame and products of combustion or fireblocked in such a manner that open spaces under the flooring shall not exceed 100 square feet (9.3 m<sup>2</sup>) in area and such space shall be filled solidly under permanent partitions so that communication under the flooring between adjoining rooms shall not occur.

##### Exceptions:

1. *Fireblocking* is not required for slab-on-grade floors in gymnasiums.
2. *Fireblocking* is required only at the juncture of each alternate lane and at the ends of each lane in a bowling facility.

#### 718.3 Draftstopping in floors.

Draftstopping shall be installed to subdivide floor/ceiling assemblies where required by [Section 708.4.2](#). In other than Group R occupancies, draftstopping shall be installed to subdivide combustible floor/ceiling assemblies so that horizontal floor areas do not exceed 1,000 square feet (93 m<sup>2</sup>).

**Exception:** Buildings equipped throughout with an *automatic sprinkler system* in accordance with [Section 903.3.1.1](#).

##### 718.3.1 Draftstopping materials.

Draftstopping materials shall be not less than <sup>1</sup>/<sub>2</sub>-inch (12.7 mm) *gypsum board*, <sup>3</sup>/<sub>8</sub>-inch (9.5 mm) *wood structural panel*, <sup>3</sup>/<sub>8</sub>-inch (9.5 mm) *particleboard*, 1-inch (25-mm) nominal lumber, cement *fiberboard*, batts or blankets of mineral wool or glass fiber, or other *approved* materials adequately supported. The integrity of *draftstops* shall be maintained.

#### 718.4 Draftstopping in attics.

Draftstopping shall be installed to subdivide *attic* spaces where required by [Section 708.4.2](#). In other than Group R, draftstopping shall be installed to subdivide combustible *attic* spaces and combustible concealed roof spaces such that any horizontal area does not exceed 3,000 square feet (279 m<sup>2</sup>). *Ventilation* of concealed roof spaces shall be maintained in accordance with [Section 1202.2.1](#).

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**Exception:** Buildings equipped throughout with an *automatic sprinkler system* in accordance with [Section 903.3.1.1](#).

#### **718.4.1 Draftstopping materials.**

Materials utilized for draftstopping of *attic* spaces shall comply with [Section 718.3.1](#).

##### **718.4.1.1 Openings.**

Openings in the partitions shall be protected by *self-closing* doors with automatic latches constructed as required for the partitions.

#### **718.5 Combustible materials in concealed spaces in Type I or II construction.**

Combustible materials shall not be permitted in concealed spaces of buildings of Type I or II construction.

##### **Exceptions:**

1. Combustible materials in accordance with [Section 603](#).
2. Combustible materials exposed within plenums complying with [Section 602](#) of the *International Mechanical Code*.
3. Class A *interior finish* materials classified in accordance with [Section 803](#).
4. Combustible piping within partitions or shaft enclosures installed in accordance with the provisions of this code.
5. Combustible piping within concealed ceiling spaces installed in accordance with the *International Mechanical Code* and the *International Plumbing Code*.
6. Combustible insulation and covering on pipe and tubing, installed in concealed spaces other than plenums, complying with [Section 720.7](#).