

## 2021 Virginia Construction Code

### CHAPTER 4 SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

#### SECTION 408 GROUP I-3

##### 408.1 General.

Occupancies in Group I-3 shall comply with the provisions of [Sections 408.1](#) through [408.11](#) and other applicable provisions of this code (see [Section 308.5](#)).

##### 408.2 Other occupancies.

Buildings or portions of buildings in Group I-3 occupancies where security operations necessitate the locking of required *means of egress* shall be permitted to be classified as a different occupancy. Occupancies classified as other than Group I-3 shall meet the applicable requirements of this code for that occupancy where provisions are made for the release of occupants at all times.

*Means of egress* from detention and correctional occupancies that traverse other use areas shall, as a minimum, conform to requirements for detention and correctional occupancies.

**Exception:** It is permissible to exit through a *horizontal exit* into other contiguous occupancies that do not conform to detention and correctional occupancy egress provisions but that do comply with requirements set forth in the appropriate occupancy, as long as the occupancy is not a Group H use.

##### 408.2.1 Short-term holding areas.

*Short-term holding* areas shall be permitted to comply with [Section 431](#).

##### 408.3 Means of egress.

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

##### 408.3.1 Door width.

Doors to resident *sleeping units* shall have a clear width of not less than 28 inches (711 mm).

##### 408.3.2 Sliding doors.

Where doors in a *means of egress* are of the horizontal-sliding type, the force to slide the door to its fully open position shall be not greater than 50 pounds (220 N) with a perpendicular force against the door of 50 pounds (220 N).

##### 408.3.3 Guard tower doors.

A hatch or trap door not less than 16 square feet (610 m<sup>2</sup>) in area through the floor and having dimensions of not less than 2 feet (610 mm) in any direction shall be permitted to be used as a portion of the *means of egress* from guard towers.

##### 408.3.4 Spiral stairways.

*Spiral stairways* that conform to the requirements of [Section 1011.10](#) are permitted for access to and between staff locations.

##### 408.3.5 Ship's ladders.

Ship's ladders shall be permitted for egress from control rooms or elevated facility observation rooms in accordance with [Section 1011.15](#).

##### 408.3.6 Exit discharge.

*Exits* are permitted to discharge into a fenced or walled courtyard. Enclosed *yards* or *courts* shall be of a size to accommodate all occupants, be located not less than 50 feet (15 240 mm) from the building and have an area of not less than 15 square feet (1.4 m<sup>2</sup>) per person.

##### 408.3.7 Sallyports.

A *sallyport* shall be permitted in a *means of egress* where there are provisions for continuous and unobstructed passage through the *sallyport* during an emergency egress condition.

##### 408.3.8 Interior exit stairway and ramp construction.

One *interior exit stairway* or *ramp* in each building shall be permitted to have glazing installed in doors and interior walls at each landing level providing access to the *interior exit stairway* or *ramp*, provided that the following conditions are met:

1. The *interior exit stairway* or *ramp* shall not serve more than four floor levels.
2. *Exit* doors shall be not less than <sup>3</sup>/<sub>4</sub>-hour *fire door assemblies* complying with [Section 716](#).
3. The total area of glazing at each floor level shall not exceed 5,000 square inches (3.2 m<sup>2</sup>) and individual panels of glazing shall not exceed 1,296 square inches (0.84 m<sup>2</sup>).

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4. The glazing shall be protected on both sides by an *automatic sprinkler system*. The sprinkler system shall be designed to wet completely the entire surface of any glazing affected by fire when actuated.
5. The glazing shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler system operates.
6. Obstructions, such as curtain rods, drapery traverse rods, curtains, drapes or similar materials shall not be installed between the automatic sprinklers and the glazing.

#### **408.4 Locks.**

Egress doors are permitted to be locked in accordance with the applicable use condition. Doors from a refuge area to the outside are permitted to be locked with a key in lieu of locking methods described in [Section 408.4.1](#). The keys to unlock the exterior doors shall be available at all times and the locks shall be operable from both sides of the door.

##### **408.4.1 Remote release.**

Remote release of locks on doors in a *means of egress* shall be provided with reliable means of operation, remote from the resident living areas, to release locks on all required doors. In Occupancy Condition 3 or 4, the arrangement, accessibility and security of the release mechanisms required for egress shall be such that with the minimum available staff at any time, the lock mechanisms are capable of being released within 2 minutes.

**Exception:** Provisions for remote locking and unlocking of occupied rooms in Occupancy Condition 4 are not required provided that not more than 10 locks are necessary to be unlocked in order to move occupants from one *smoke compartment* to a refuge area within 3 minutes. The opening of necessary locks shall be accomplished with not more than two separate keys.

##### **[F] 408.4.2 Power-operated doors and locks.**

*Power-operated* sliding doors or *power-operated* locks for swinging doors shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with [Section 2702](#).

##### **Exceptions:**

1. Emergency power is not required in facilities with 10 or fewer locks complying with the exception to [Section 408.4.1](#).
2. Emergency power is not required where remote mechanical operating releases are provided.

##### **408.4.3 Redundant operation.**

Remote release, mechanically operated sliding doors or remote release, mechanically operated locks shall be provided with a mechanically operated release mechanism at each door, or shall be provided with a redundant remote release control.

##### **408.4.4 Relock capability.**

Doors remotely unlocked under emergency conditions shall not automatically relock when closed unless specific action is taken at the remote location to enable doors to relock.

#### **408.5 Protection of vertical openings.**

Any vertical opening shall be protected by a shaft enclosure in accordance with [Section 713](#), or shall be in accordance with [Section 408.5.1](#).

##### **408.5.1 Floor openings.**

Openings in floors within a *housing unit* are permitted without a shaft enclosure, provided that all of the following conditions are met:

1. The entire normally occupied areas so interconnected are open and unobstructed so as to enable observation of the areas by supervisory personnel.
2. *Means of egress* capacity is sufficient for all occupants from all interconnected *cell tiers* and areas.
3. The height difference between the floor levels of the highest and lowest *cell tiers* shall not exceed 23 feet (7010 mm).
4. Egress from any portion of the *cell tier* to an *exit* or *exit access* door shall not require travel on more than one additional floor level within the *housing unit*.

##### **408.5.2 Shaft openings in communicating floor levels.**

Where a floor opening is permitted between communicating floor levels of a *housing unit* in accordance with [Section 408.5.1](#), plumbing chases serving vertically stacked individual cells contained within the *housing unit* shall be permitted without a shaft enclosure.

#### **408.6 Smoke barrier.**

Occupancies classified as Group I-3 shall have smoke barriers complying with [Sections 408.8](#) and [709](#) to divide every story occupied by residents for sleeping, or any other story having an occupant load of 50 or more persons, into no fewer

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than two smoke compartments.

#### **408.6.1 Smoke compartments.**

The number of residents in any *smoke compartment* shall be not more than 200. The distance of travel to a door in a *smoke barrier* from any room door required as *exit access* shall be not greater than 150 feet (45 720 mm). The distance of travel to a door in a *smoke barrier* from any point in a room shall be not greater than 200 feet (60 960 mm).

#### **408.6.2 Refuge area.**

Not less than 6 net square feet (0.56 m<sup>2</sup>) per occupant shall be provided on each side of each *smoke barrier* for the total number of occupants in adjoining *smoke compartments*. This space shall be readily available wherever the occupants are moved across the *smoke barrier* in a fire emergency.

#### **408.6.3 Independent egress.**

A *means of egress* shall be provided from each *smoke compartment* created by *smoke barriers* without having to return through the *smoke compartment* from which *means of egress* originates.

#### **408.7 Security glazing.**

In occupancies in Group I-3, windows and doors in 1-hour *fire barriers* constructed in accordance with [Section 707](#), *fire partitions* constructed in accordance with [Section 708](#) and *smoke barriers* constructed in accordance with [Section 709](#) shall be permitted to have security glazing installed provided that the following conditions are met.

1. Individual panels of glazing shall not exceed 1,296 square inches (0.84 m<sup>2</sup>).
2. The glazing shall be protected on both sides by an *automatic sprinkler system*. The sprinkler system shall be designed to, when actuated, wet completely the entire surface of any glazing affected by fire.
3. The glazing shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler system operates.
4. Obstructions, such as curtain rods, drapery traverse rods, curtains, drapes or similar materials shall not be installed between the automatic sprinklers and the glazing.

#### **408.8 Subdivision of resident housing areas.**

Sleeping areas and any contiguous day room, group activity space or other common spaces where residents are housed shall be separated from other spaces in accordance with [Sections 408.8.1](#) through [408.8.4](#).

##### **408.8.1 Occupancy Conditions 3 and 4.**

Each sleeping area in Occupancy Conditions 3 and 4 shall be separated from the adjacent common spaces by a smoke-tight partition where the distance of travel from the sleeping area through the common space to the *corridor* exceeds 50 feet (15 240 mm).

##### **408.8.2 Occupancy Condition 5.**

Each sleeping area in Occupancy Condition 5 shall be separated from adjacent sleeping areas, *corridors* and common spaces by a smoke-tight partition. Additionally, common spaces shall be separated from the *corridor* by a smoke-tight partition.

##### **408.8.3 Openings in room face.**

The aggregate area of openings in a solid sleeping room face in Occupancy Conditions 2, 3, 4 and 5 shall not exceed 120 square inches (0.77 m<sup>2</sup>). The aggregate area shall include all openings including door undercuts, food passes and grilles. Openings shall be not more than 36 inches (914 mm) above the floor. In Occupancy Condition 5, the openings shall be closeable from the room side.

##### **408.8.4 Smoke-tight doors.**

Doors in openings in partitions required to be smoke tight by [Section 408.8](#) shall be substantial doors, of construction that will resist the passage of smoke. Latches and door closures are not required on *cell doors*.

#### **408.9 Smoke control.**

Smoke control for each smoke compartment shall be in accordance with [Sections 408.9.1](#) through [408.9.3](#).

**Exception:** Smoke compartments with operable windows or windows that are readily breakable.

##### **408.9.1 Locations.**

An engineered smoke control system shall comply with [Section 909](#) and shall be provided in the following locations:

1. Dormitory areas.
2. Celled areas.
3. General housing areas.
4. Intake areas.
5. Medical celled or medical dormitory areas.

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6. Interior recreation areas.

#### **408.9.2 Compliance.**

The engineered smoke control system shall provide and maintain *atenable environment* in the area of origin and shall comply with all of the following:

1. Shall facilitate the timely evacuation and relocation of occupants from the area of origin.
2. Shall be independent of exhaust systems under [Chapter 5](#) of the *Virginia Mechanical Code*.
3. Duration of operation in accordance with [Section 909.4.6](#).
4. The pressurization method shall be permitted and shall provide a minimum of 24 air changes per hour of exhaust, and 20 air changes per hour of makeup, and shall comply with [Section 909.6](#). If the pressurization method is not utilized, the exhaust method shall be provided and shall comply with [Section 909.8](#).

#### **408.9.3 Corridors.**

Egress corridors within smoke compartments shall be kept free and clear of smoke.

#### **[F] 408.10 Fire alarm system.**

A *fire alarm* system shall be provided in accordance with [Section 907.2.6.3](#).

#### **[F] 408.11 Automatic sprinkler system.**

Group I-3 occupancies shall be equipped throughout with an *automatic sprinkler system* in accordance with [Section 903.2.6](#).