

# **2021 Virginia Construction Code**

## **CHAPTER 12 INTERIOR ENVIRONMENT**

### **SECTION 1201 GENERAL**

#### **1201.1 Scope.**

The provisions of this chapter shall govern ventilation, temperature control, lighting, *yards* and *courts*, sound transmission, room dimensions, surrounding materials and rodentproofing associated with the interior spaces of buildings.

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## CHAPTER 12 INTERIOR ENVIRONMENT

### SECTION 1202 VENTILATION

#### 1202.1 General.

Buildings shall be provided with natural ventilation in accordance with [Section 1202.5](#), or mechanical ventilation in accordance with the [International Mechanical Code](#).

Where the air infiltration rate in a *dwelling unit* is less than 5 air changes per hour where tested with a blower door at a pressure 0.2 inch w.c. (50 Pa) in accordance with [Section R402.4.1.2](#) of the *International Energy Conservation Code—Residential Provisions*, the *dwelling unit* shall be ventilated by mechanical means in accordance with [Section 403](#) of the *International Mechanical Code*. *Ambulatory care facilities* and Group I-2 occupancies shall be ventilated by mechanical means in accordance with [Section 407](#) of the *International Mechanical Code*.

#### 1202.2 Roof ventilation.

Roof assemblies shall be ventilated in accordance with this section or shall comply with [Section 1202.3](#).

##### 1202.2.1 Ventilated attics and rafter spaces.

Enclosed *attics* and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof framing members shall have cross ventilation for each separate space by ventilation openings protected against the entrance of rain and snow. Blocking and bridging shall be arranged so as not to interfere with the movement of air. An airspace of not less than 1 inch (25 mm) shall be provided between the insulation and the roof sheathing. The net free ventilating area shall be not less than  $\frac{1}{150}$  of the area of the space ventilated. Ventilators shall be installed in accordance with manufacturer's installation instructions.

**Exception:** The net free cross-ventilation area shall be permitted to be reduced to  $\frac{1}{300}$  provided both of the following conditions are met:

1. In Climate Zones 6, 7 and 8, a Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling.
2. At least 40 percent and not more than 50 percent of the required venting area is provided by ventilators located in the upper portion of the *attic* or rafter space. Upper ventilators shall be located not more than 3 feet (914 mm) below the ridge or highest point of the space, measured vertically, with the balance of the *ventilation* provided by eave or cornice vents. Where the location of wall or roof framing members conflicts with the installation of upper ventilators, installation more than 3 feet (914 mm) below the ridge or highest point of the space shall be permitted.

##### 1202.2.2 Openings into attic.

Exterior openings into the *attic* space of any building intended for human occupancy shall be protected to prevent the entry of birds, squirrels, rodents, snakes and other similar creatures. Openings for ventilation having a least dimension of not less than  $\frac{1}{16}$  inch (1.6 mm) and not more than  $\frac{1}{4}$  inch (6.4 mm) shall be permitted. Openings for ventilation having a least dimension larger than  $\frac{1}{4}$  inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl or similar material with openings having a least dimension of not less than  $\frac{1}{16}$  inch (1.6 mm) and not more than  $\frac{1}{4}$  inch (6.4 mm). Where combustion air is obtained from an *attic* area, it shall be in accordance with [Chapter 7](#) of the *International Mechanical Code*.

#### 1202.3 Unvented attic and unvented enclosed rafter assemblies.

Unvented *attics* and unvented enclosed roof framing assemblies created by ceilings applied directly to the underside of the roof framing members/rafters and the structural roof sheathing at the top of the roof framing members shall be permitted where all of the following conditions are met:

1. The unvented *attic* space is completely within the *building thermal envelope*.
2. No interior Class I vapor retarders are installed on the ceiling side (*attic* floor) of the unvented *attic* assembly or on the ceiling side of the unvented enclosed roof framing assembly.
3. Where wood shingles or shakes are used, not less than a  $\frac{1}{4}$ -inch (6.4 mm) vented airspace separates the shingles or shakes and the roofing *underlayment* above the structural sheathing.
4. In Climate Zones 5, 6, 7 and 8, any *air-impermeable insulation* shall be a Class II vapor retarder or shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation.
5. Insulation shall [comply with either Item 5.1 or 5.2, and additionally Item 5.3](#).
  - 5.1. Item 5.1.1, 5.1.2, 5.1.3 or 5.1.4 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.
    - 5.1.1. Where only *air-impermeable insulation* is provided, it shall be applied in direct contact with the underside of the structural roof sheathing.

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- 5.1.2. Where air-permeable insulation is provided inside the building thermal envelope, it shall be installed in accordance with Item 5.1.1. In addition to the air-permeable insulation installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing in accordance with the *R*-values in [Table 1202.3](#) for condensation control.
- 5.1.3. Where both air-impermeable and air-permeable insulation are provided, the *air-impermeable insulation* shall be applied in direct contact with the underside of the structural roof sheathing in accordance with Item 5.1.1 and shall be in accordance with the *R*-values in [Table 1202.3](#) for condensation control. The *air-permeable insulation* shall be installed directly under the *air-impermeable insulation*.
- 5.1.4. Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45°F (7°C). For calculation purposes, an interior air temperature of 68°F (20°C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.
- 5.2. In Climate Zones 1, 2 and 3, air-permeable insulation installed in unvented attics shall meet the following requirements:
- 5.2.1. A vapor diffusion port shall be installed not more than 12 inches (305 mm) from the highest point of the roof, measured vertically from the highest point of the roof to the lower edge of the port.
- 5.2.2. The port area shall be greater than or equal to  $\frac{1}{600}$  of the ceiling area. Where there are multiple ports in the attic, the sum of the port areas shall be greater than or equal to the area requirement.
- 5.2.3. The vapor permeable membrane in the vapor diffusion port shall have a vapor permeance rating of greater than or equal to 20 perms when tested in accordance with Procedure A of [ASTM E96](#).
- 5.2.4. The vapor diffusion port shall serve as an air barrier between the attic and the exterior of the building.
- 5.2.5. The vapor diffusion port shall protect the attic against the entrance of rain and snow.
- 5.2.6. Framing members and blocking shall not block the free flow of water vapor to the port. Not less than a 2-inch (50 mm) space shall be provided between any blocking and the roof sheathing. Air-permeable insulation shall be permitted within that space.
- 5.2.7. The roof slope shall be greater than or equal to 3 units vertical in 12 units horizontal (3:12).
- 5.2.8. Where only air-permeable insulation is used, it shall be installed directly below the structural roof sheathing, on top the attic floor, or on top of the ceiling.
- 5.2.9. Where only air-permeable insulation is used and is installed directly below the structural roof sheathing, air shall be supplied at a flow rate greater than or equal to 50 cubic feet per minute (23.6 L/s) per 1,000 square feet (93 m<sup>2</sup>) of ceiling.
- 5.3. The air shall be supplied from ductwork providing supply air to the occupiable space when the conditioning system is operating. Alternatively, the air shall be supplied by a supply fan when the conditioning system is operating. Where preformed insulation board is used as the air-impermeable insulation layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.

#### Exceptions:

1. [Section 1202.3](#) does not apply to special use structures or enclosures such as swimming pool enclosures, data processing centers, hospitals or art galleries.
2. [Section 1202.3](#) does not apply to enclosures in Climate Zones 5 through 8 that are humidified beyond 35 percent during the three coldest months.

**TABLE 1202.3**  
**INSULATION FOR CONDENSATION CONTROL**

| CLIMATE ZONE             | MINIMUM <i>R</i> -VALUE OF AIR-IMPERMEABLE INSULATION <sup>a</sup> |
|--------------------------|--|
| 2B and 3B tile roof only | 0 (none required)  |
| 1, 2A, 2B, 3A, 3B, 3C    | R-5  |
| 4C                       | R-10   |
| 4A, 4B                   | R-15   |
| 5                        | R-20   |
| 6                        | R-25   |
| 7                        | R-30   |
| 8                        | R-35   |

- a. Contributes to, but does not supersede, thermal resistance requirements for attic and roof assemblies in [Section C402.2.1](#) of the *International Energy Conservation*

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Code.

#### **1202.4 Under-floor ventilation.**

The space between the bottom of the floor joists and the earth under any building except spaces occupied by basements or cellars shall be provided with ventilation in accordance with [Section 1202.4.1](#), [1202.4.2](#) or [1202.4.3](#).

##### **1202.4.1 Ventilation openings.**

Ventilation openings through foundation walls shall be provided. The openings shall be placed so as to provide cross ventilation of the under-floor space. The net area of ventilation openings shall be in accordance with [Section 1202.4.1.1](#) or [1202.4.1.2](#). Ventilation openings shall be covered for their height and width with any of the following materials, provided that the least dimension of the covering shall be not greater than  $\frac{1}{4}$  inch (6.4 mm):

1. Perforated sheet metal plates not less than 0.070 inch (1.8 mm) thick.
2. Expanded sheet metal plates not less than 0.047 inch (1.2 mm) thick.
3. Cast-iron grilles or gratings.
4. Extruded load-bearing vents.
5. Hardware cloth of 0.035-inch (0.89 mm) wire or heavier.
6. Corrosion-resistant wire mesh, with the least dimension not greater than  $\frac{1}{8}$  inch (3.2 mm).
7. Operable louvers, where ventilation is provided in accordance with [Section 1202.4.1.2](#).

##### **1202.4.1.1 Ventilation area for crawl spaces with open earth floors.**

The net area of ventilation openings for crawl spaces with uncovered earth floors shall be not less than 1 square foot for each 150 square feet (0.67 m<sup>2</sup> for each 100 m<sup>2</sup>) of crawl space area.

##### **1202.4.1.2 Ventilation area for crawl spaces with covered floors.**

The net area of ventilation openings for crawl spaces with the ground surface covered with a Class I vapor retarder shall be not less than 1 square foot for each 1,500 square feet (0.67 m<sup>2</sup> for each 1000 m<sup>2</sup>) of crawl space area.

#### **1202.4.2 Ventilation in cold climates.**

In extremely cold climates, where a ventilation opening will cause a detrimental loss of energy, ventilation openings to the interior of the structure shall be provided.

#### **1202.4.3 Mechanical ventilation.**

Mechanical ventilation shall be provided to crawl spaces where the ground surface is covered with a Class I vapor retarder. Ventilation shall be in accordance with [Section 1202.4.3.1](#) or [1202.4.3.2](#).

##### **1202.4.3.1 Continuous mechanical ventilation.**

Continuously operated mechanical ventilation shall be provided at a rate of 1.0 cubic foot per minute (cfm) for each 50 square feet (1.02 L/s for each 10 m<sup>2</sup>) of crawl space ground surface area and the ground surface shall be covered with a Class I vapor retarder.

##### **1202.4.3.2 Conditioned space.**

The crawl space shall be conditioned in accordance with the [International Mechanical Code](#) and the walls of the crawl space shall be insulated in accordance with the [International Energy Conservation Code](#).

#### **1202.4.4 Flood hazard areas.**

For buildings in *flood hazard areas* as established in [Section 1612.3](#), the openings for under-floor ventilation shall be deemed as meeting the flood opening requirements of [ASCE 24](#) provided that the ventilation openings are designed and installed in accordance with [ASCE 24](#).

#### **1202.5 Natural ventilation.**

Natural *ventilation* of an occupied space shall be through windows, doors, louvers or other openings to the outdoors. The operating mechanism for such openings shall be provided with ready access so that the openings are readily controllable by the building occupants.

##### **1202.5.1 Ventilation area required.**

The openable area of the openings to the outdoors shall be not less than 4 percent of the floor area being ventilated.

##### **1202.5.1.1 Adjoining spaces.**

Where rooms and spaces without openings to the outdoors are ventilated through an adjoining room, the opening to the adjoining room shall be unobstructed and shall have an area of not less than 8 percent of the floor area of the interior room or space, but not less than 25 square feet (2.3 m<sup>2</sup>). The openable area of the openings to the outdoors shall be based on the total floor area being ventilated.

**Exception:** Exterior openings required for *ventilation* shall be allowed to open into a *sunroom* with *thermal isolation* or a patio cover provided that the openable area between the *sunroom* addition or patio cover and the interior room

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shall have an area of not less than 8 percent of the floor area of the interior room or space, but not less than 20 square feet (1.86 m<sup>2</sup>). The openable area of the openings to the outdoors shall be based on the total floor area being ventilated.

#### **1202.5.1.2 Openings below grade.**

Where openings below grade provide required natural *ventilation*, the outside horizontal clear space measured perpendicular to the opening shall be one and one-half times the depth of the opening. The depth of the opening shall be measured from the average adjoining ground level to the bottom of the opening.

#### **1202.5.2 Contaminants exhausted.**

Contaminant sources in naturally ventilated spaces shall be removed in accordance with the [International Mechanical Code](#) and the [International Fire Code](#).

##### **1202.5.2.1 Bathrooms.**

Rooms containing bathtubs, showers, spas and similar bathing fixtures shall be mechanically ventilated in accordance with the [International Mechanical Code](#).

#### **1202.5.3 Openings on yards or courts.**

Where natural *ventilation* is to be provided by openings onto *yards* or *courts*, such *yards* or *courts* shall comply with [Section 1205](#).

#### **1202.5.4 Insect screens in occupancies other than Group R.**

Every door, window and other outside opening for natural ventilation serving structures classified as other than a residential group containing habitable rooms, food preparation areas, food service areas, or any areas where products to be included or utilized in food for human consumption are processed, manufactured, packaged, or stored, shall be supplied with approved tightly fitting screens of not less than 16 mesh per inch (16 mesh per 25 mm) and every screen door used for insect control shall have a self-closing device.

**Exception:** Screen doors shall not be required for out swinging doors or other types of openings which make screening impractical, provided other approved means, such as air curtains or insect repellent fans are provided.

#### **1202.5.5 Insect screens in Group R occupancies.**

Every door, window and other outside opening required for natural ventilation purposes that serves a structure classified as a residential group shall be supplied with approved tightly fitted screens of not less than 16 mesh per inch (16 mesh per 25 mm) and every screen door used for insect control shall have a self-closing device.

#### **1202.6 Other ventilation and exhaust systems.**

*Ventilation* and exhaust systems for occupancies and operations involving flammable or combustible hazards or other contaminant sources as covered in the [International Mechanical Code](#) or the [International Fire Code](#) shall be provided as required by both codes.

#### **1202.7 Smoking areas in restaurants.**

Smoking areas in restaurants, as defined in § 15.2-2820 of the Code of Virginia, shall comply with the following:

1. The area where smoking may be permitted shall be structurally separated from the portion of the restaurant in which smoking is prohibited. For the purposes of this section, structurally separated means a stud wall covered with drywall or other building material or like barrier, which, when completed, extends from the floor to the ceiling, resulting in a physically separated room. Such wall or barrier may include portions that are glass or other gas-imperious building material and shall be permitted to have a door leading to areas in which smoking is prohibited, provided the door is capable of being closed at all times.
2. The area where smoking may be permitted shall be separately vented to prevent the recirculation of air from such area to the area of the restaurant where smoking is prohibited.

**Exception:** The above requirements do not apply if a restaurant is exempt from, or meets any of the exceptions to, the Virginia Indoor Clean Air Act (Chapter 28.2 of Title 15.2 (§ 15.2-2820 et seq.) of the Code of Virginia).

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### SECTION 1203 TEMPERATURE CONTROL

#### 1203.1 Equipment and systems.

Interior spaces intended for human occupancy shall be provided with active or passive space heating systems capable of maintaining an indoor temperature of not less than 68°F (20°C) at a point 3 feet (914 mm) above the floor on the design heating day.

**Exceptions:** Space heating systems are not required for:

1. Interior spaces where the primary purpose of the space is not associated with human comfort.
2. Group F, H, S or U occupancies.

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### SECTION 1204 LIGHTING

#### 1204.1 General.

Every space intended for human occupancy shall be provided with natural light by means of exterior glazed openings in accordance with [Section 1204.2](#) or shall be provided with artificial light in accordance with [Section 1204.3](#). Exterior glazed openings shall open directly onto a *public way* or onto a *yard* or *court* in accordance with [Section 1205](#).

#### 1204.2 Natural light.

The minimum net glazed area shall be not less than 8 percent of the floor area of the room served.

##### 1204.2.1 Adjoining spaces.

For the purpose of natural lighting, any room is permitted to be considered as a portion of an adjoining room where one-half of the area of the common wall is open and unobstructed and provides an opening of not less than one-tenth of the floor area of the interior room or 25 square feet (2.32 m<sup>2</sup>), whichever is greater.

**Exception:** Openings required for natural light shall be permitted to open into a *sunroom* with *thermal isolation* or a patio cover where the common wall provides a glazed area of not less than one-tenth of the floor area of the interior room or 20 square feet (1.86 m<sup>2</sup>), whichever is greater.

##### 1204.2.2 Exterior openings.

Exterior openings required by [Section 1204.2](#) for natural light shall open directly onto a *public way*, *yard* or *court*, as set forth in [Section 1205](#).

##### Exceptions:

1. Required exterior openings are permitted to open into a roofed porch where the porch meets all of the following criteria:
  - 1.1. Abuts a *public way*, *yard* or *court*.
  - 1.2. Has a ceiling height of not less than 7 feet (2134 mm).
  - 1.3. Has a longer side at least 65 percent open and unobstructed.
2. Skylights are not required to open directly onto a *public way*, *yard* or *court*.

#### 1204.3 Artificial light.

Artificial light shall be provided that is adequate to provide an average illumination of 10 footcandles (107 lux) over the area of the room at a height of 30 inches (762 mm) above the floor level.

#### 1204.4 Stairway illumination.

*Stairways* within *dwelling units* and *exterior stairways* serving a *dwelling unit* shall have an illumination level on tread runs of not less than 1 footcandle (11 lux). *Stairways* in other occupancies shall be governed by [Chapter 10](#).

##### 1204.4.1 Controls.

The control for activation of the required *stairway* lighting shall be in accordance with [NFPA 70](#).

#### 1204.5 Emergency egress lighting.

The *means of egress* shall be illuminated in accordance with [Section 1008.1](#).

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### SECTION 1205 YARDS OR COURTS

#### 1205.1 General.

This section shall apply to *yards* and *courts* adjacent to exterior openings that provide natural light or ventilation. Such *yards* and *courts* shall be on the same *lot* as the building.

#### 1205.2 Yards.

*Yards* shall be not less than 3 feet (914 mm) in width for buildings two *stories* or less above *grade plane*. For buildings more than two *stories above grade plane*, the minimum width of the *yard* shall be increased at the rate of 1 foot (305 mm) for each additional *story*. For buildings exceeding 14 *stories above grade plane*, the required width of the *yard* shall be computed on the basis of 14 *stories above grade plane*.

#### 1205.3 Courts.

*Courts* shall be not less than 3 feet (914 mm) in width. *Courts* having windows opening on opposite sides shall be not less than 6 feet (1829 mm) in width. *Courts* shall be not less than 10 feet (3048 mm) in length unless bounded on one end by a *public way* or *yard*. For buildings more than two *stories above grade plane*, the *court* shall be increased 1 foot (305 mm) in width and 2 feet (610 mm) in length for each additional *story*. For buildings exceeding 14 *stories above grade plane*, the required dimensions shall be computed on the basis of 14 *stories above grade plane*.

##### 1205.3.1 Court access.

Access shall be provided to the bottom of *courts* for cleaning purposes.

##### 1205.3.2 Air intake.

*Courts* more than two *stories* in height shall be provided with a horizontal air intake at the bottom not less than 10 square feet (0.93 m<sup>2</sup>) in area and leading to the exterior of the building unless abutting a *yard* or *public way*.

##### 1205.3.3 Court drainage.

The bottom of every *court* shall be properly graded and drained to a public sewer or other *approved* disposal system complying with the [International Plumbing Code](#).



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### SECTION 1206 SOUND TRANSMISSION

#### 1206.1 Scope.

Sections 1206.2 and 1206.3 shall apply to common interior walls, partitions and floor or ceiling assemblies between adjacent dwelling units or between dwelling units and adjacent public areas such as halls, corridors, stairs or service areas. Section 1206.4 applies to the *construction* of the exterior envelope of Group R occupancies within airport noise zones and to the exterior envelope of Groups A, B, E, I and M occupancies in any *locality* in whose jurisdiction, or adjacent jurisdiction, is located a United States Master Jet Base, a licensed airport or United States government or military air facility, when such requirements are enforced by a *locality* pursuant to § 15.2-2295 of the Code of Virginia.

#### 1206.2 Airborne sound.

Walls, partitions and floor-ceiling assemblies separating *dwelling units* and *sleeping units* from each other or from public or service areas shall have a *sound transmission class* of not less than 50 *where tested in accordance with ASTM E90*, or *have a Normalized Noise Isolation Class (NNIC) rating of* not less than 45 if field tested, in accordance with *ASTM E336 for airborne noise*. Alternatively, the *sound transmission class* of walls, partitions and floor-ceiling assemblies shall be established by engineering analysis based on a comparison of walls, partitions and floor-ceiling assemblies having *sound transmission class* ratings as determined by the test procedures set forth in *ASTM E90*. Penetrations or openings in construction assemblies for piping; electrical devices; recessed cabinets; bathtubs; soffits; or heating, ventilating or exhaust ducts shall be sealed, lined, insulated or otherwise treated to maintain the required ratings. This requirement shall not apply to entrance doors; however, such doors shall be tight fitting to the frame and sill.

##### 1206.2.1 Masonry.

The *sound transmission class* of concrete masonry and clay masonry assemblies shall be calculated in accordance with *TMS 302* or determined through testing in accordance with *ASTM E90*.

#### 1206.3 Structure-borne sound.

Floor-ceiling assemblies between *dwelling units* and *sleeping units* or between a *dwelling unit* or *sleeping unit* and a public or service area within the structure shall have an impact insulation class rating of not less than 50 *where tested in accordance with ASTM E492*, or *have a Normalized Impact Sound Rating (NISR) of* not less than 45 if field tested in accordance with *ASTM E1007*. Alternatively, the impact insulation class of floor-ceiling assemblies shall be established by engineering analysis based on a comparison of floor-ceiling assemblies having impact insulation class ratings as determined by the test procedures in *ASTM E492*.

#### 1206.4 Airport noise attenuation standards.

Where the *daynight average sound level (Ldn)* is determined to be 65 dBA or greater, the minimum STC rating of structure components shall be provided in compliance with *Table 1206.4*. As an alternative to compliance with *Table 1206.4*, structures shall be permitted to be designed and constructed so as to limit the interior noise level to no greater than 45 *Ldn*. Exterior structures, terrain and permanent plantings shall be permitted to be included as part of the alternative design. The alternative design shall be certified by a *registered design professional (RDP)*.

**Table 1206.4**  
**AIRPORT NOISE ATTENUATION STANDARDS**

| Ldn           | STC OF EXTERIOR WALLS AND ROOF/CEILING ASSEMBLIES | STC OF DOORS AND WINDOWS |
|---------------|---|--------------------------|
| 65-69         | 39  | 25                       |
| 70-74         | 44  | 33                       |
| 75 or greater | 49  | 38                       |

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**CHAPTER 12 INTERIOR ENVIRONMENT**  
**SECTION 1207**  
**ENHANCED CLASSROOM ACOUSTICS**

**1207.1 General.**

Enhanced classroom acoustics, where required by this section, shall comply with Section 808 of ICC A117.1.

**1207.2 Where required.**

In Group E occupancies, enhanced classroom acoustics shall be provided in all classrooms with a volume of 20,000 cubic feet (566 m<sup>3</sup>) or less.

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### SECTION 1208 INTERIOR SPACE DIMENSIONS

#### 1208.1 Minimum room widths.

*Habitable spaces*, other than a kitchen, shall be not less than 7 feet (2134 mm) in any plan dimension. Kitchens shall have a clear passageway of not less than 3 feet (914 mm) between counter fronts and appliances or counter fronts and walls.

#### 1208.2 Minimum ceiling heights.

*Occupiable spaces*, *habitable spaces* and corridors shall have a ceiling height of not less than 7 feet 6 inches (2286 mm) above the finished floor. Bathrooms, toilet rooms, kitchens, storage rooms and laundry rooms shall have a ceiling height of not less than 7 feet (2134 mm) above the finished floor.

##### Exceptions:

1. In one- and two-family *dwelling*s, beams or girders spaced not less than 4 feet (1219 mm) on center shall be permitted to project not more than 6 inches (152 mm) below the required ceiling height.
2. If any room in a building has a sloped ceiling, the prescribed ceiling height for the room is required in one-half the area thereof. Any portion of the room measuring less than 5 feet (1524 mm) from the finished floor to the ceiling shall not be included in any computation of the minimum area thereof.
3. The height of *mezzanines* and spaces below *mezzanines* shall be in accordance with [Section 505.2](#).
4. Corridors contained within a *dwelling unit* or *sleeping unit* in a Group R occupancy shall have a ceiling height of not less than 7 feet (2134 mm) above the finished floor.

#### 1208.2.1 Furred ceiling.

Any room with a furred ceiling shall be required to have the minimum ceiling height in two-thirds of the area thereof, but in no case shall the height of the furred ceiling be less than 7 feet (2134 mm).

#### 1208.3 Room area.

Every *dwelling unit* shall have not less than one room that shall have not less than 120 square feet (11.2 m<sup>2</sup>) of *net floor area*. Other habitable rooms shall have a *net floor area* of not less than 70 square feet (6.5 m<sup>2</sup>).

**Exception:** Kitchens are not required to be of a minimum floor area.

#### 1208.4 Efficiency dwelling units.

*Efficiency dwelling units* shall conform to the requirements of the code except as modified herein:

1. The unit shall have a living room of not less than 190 square feet (17.7 m<sup>2</sup>) of floor area.
2. The unit shall be provided with a separate closet.
3. For other than Accessible, Type A and Type B dwelling units, the unit shall be provided with a kitchen sink, cooking appliance and refrigerator, each having a clear working space of not less than 30 inches (762 mm) in front. Light and ventilation conforming to this code shall be provided.
4. The unit shall be provided with a separate bathroom containing a water closet, lavatory and bathtub or shower.

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**CHAPTER 12 INTERIOR ENVIRONMENT**  
**SECTION 1209**  
**ACCESS TO UNOCCUPIED SPACES**

**1209.1 Crawl spaces.**

Crawl spaces shall be provided with not less than one access opening that shall be not less than 18 inches by 24 inches (457 mm by 610 mm).

**1209.2 Attic spaces.**

An opening not less than 20 inches by 30 inches (559 mm by 762 mm) shall be provided to any *attic* area having a clear height of over 30 inches (762 mm). Clear headroom of not less than 30 inches (762 mm) shall be provided in the *attic* space at or above the access opening.

**1209.3 Mechanical appliances.**

Access to mechanical appliances installed in under-floor areas, in *attic* spaces and on roofs or elevated structures shall be in accordance with the [\*International Mechanical Code\*](#).

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### SECTION 1210 TOILET AND BATHROOM REQUIREMENTS

#### [P] 1210.1 Required fixtures.

The number and type of plumbing fixtures provided in any occupancy shall comply with [Chapter 29](#).

#### [P] 1210.2 Finish materials.

Walls, floors and partitions in toilet and bathrooms shall comply with [Sections 1210.2.1](#) through [1210.2.4](#).

##### [P] 1210.2.1 Floors and wall bases.

In other than *dwelling units*, toilet, bathing and shower room floor finish materials shall have a smooth, hard, nonabsorbent surface. The intersections of such floors with walls shall have a smooth, hard, nonabsorbent vertical base that extends upward onto the walls not less than 4 inches (102 mm).

##### [P] 1210.2.2 Walls and partitions.

Walls and partitions within 2 feet (610 mm) of service sinks, urinals and water closets shall have a smooth, hard, nonabsorbent surface, to a height of not less than 4 feet (1219 mm) above the floor, and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture.

**Exception:** This section does not apply to the following buildings and spaces:

1. Dwelling units and *sleeping units*.
2. Toilet rooms that are not accessible to the public and that have not more than one water closet.

Accessories such as grab bars, towel bars, paper dispensers and soap dishes, provided on or within walls, shall be installed and sealed to protect structural elements from moisture.

##### [P] 1210.2.3 Showers.

Shower compartments and walls above bathtubs with installed shower heads shall be finished with a smooth, nonabsorbent surface to a height not less than 72 inches (1829 mm) above the drain inlet.

##### [P] 1210.2.4 Waterproof joints.

Built-in tubs with showers shall have waterproof joints between the tub and adjacent wall.

#### [P] 1210.3 Privacy.

Public restrooms shall be visually screened from outside entry or exit doorways to ensure user privacy within the restroom. This provision shall also apply where mirrors would compromise personal privacy. Privacy at water closets and urinals shall be provided in accordance with [Sections 1210.3.1](#) and [1210.3.2](#).

**Exception:** Visual screening shall not be required for single-occupant toilet rooms with a lockable door.

##### 1210.3.1 Water closet compartment.

Each water closet utilized by the public or employees shall comply with [Sections 1210.3.1.1](#) and [1210.3.1.2](#), as applicable. All fully-enclosed compartments shall be provided with occupancy indicators.

##### Exceptions:

1. A separate room or compartment shall not be required in a single-occupant toilet room with a lockable door.
2. Toilet rooms located in child day care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment.
3. This provision is not applicable to toilet areas located within Group I-3 occupancy housing areas.

##### 1210.3.1.1 Separate facilities.

Each water closet provided in separate facilities shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy and shall comply with [Section 405.3.1](#) of the *Virginia Plumbing Code* (VPC). Accessible water closets and compartments shall comply with [ICC A117.1](#).

##### 1210.3.1.2 Multi-user gender-neutral facilities.

Each water closet provided in a multi-user gender-neutral toilet facility shall occupy a separate compartment with walls or partitions including the doors thereto, which shall extend to the floor and to the ceiling with maximum  $\frac{1}{2}$ -inch (13 mm) clearances at the floor and ceiling, with gaps not exceeding  $\frac{1}{8}$ -inch (3 mm) between the doors and partitions and partitions and walls, and shall comply with [Section 405.3.1](#) of the VPC. Accessible water closet compartments shall comply with [ICC A117.1](#) and the increased toe clearance requirements.

##### 1210.3.2 Urinal separation and partitions.

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Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy and comply with [Sections 1210.3.2.1](#) and [1210.3.2.2](#), as applicable. All fully-enclosed compartments shall be provided with occupy indicators.

**Exceptions:**

1. Urinal partitions shall not be required in a single-occupant or family- or assisted-use toilet room with a lockable door.
2. Toilet rooms located in child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.
3. A separate room or compartment shall not be required in a single-occupant toilet room with a lockable door.
4. This provision is not applicable to toilet areas located within Group I-3 occupancy housing areas.

**1210.3.2.1 Separate facilities.**

The walls or partitions for urinals in separate facilities shall begin at a height not more than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm) or to a point not less than 6 inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater.

**1210.3.2.2 Multi-user gender-neutral facilities.**

Each urinal provided in a multi-user gender-neutral toilet facility shall occupy a separate compartment with walls or partitions, including the doors thereto, where the partitions extend to the floor and to the ceiling with maximum  $\frac{1}{2}$ -inch (13 mm) clearances, with gaps not exceeding  $\frac{1}{8}$ -inch (3 mm) between the doors and partitions and partitions and walls, or shall all be located in a separate room with a door, enclosing the urinals to ensure privacy. Where an accessible urinal is located within a compartment, grab bars shall not be required for the urinal, the door shall be located to allow for a forward approach to the urinal, and increased toe clearances shall be provided in accordance with [ICC A117.1](#).