



## King William County

### 2021 Code Changes

#### **R310.1 Emergency escape and rescue opening required.**

Basements, habitable attics, and every sleeping room designated on the construction documents shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency egress and rescue opening shall be required in each sleeping room. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court having a minimum width of 36 inches (914 mm) that opens to a public way.

#### **Exceptions:**

1. *Stormshelters* and *basements* used only to house mechanical *equipment* not exceeding a total floor area of 200 square feet (18.58 m<sup>2</sup>).
2. *Dwelling units* equipped throughout with an approved automatic sprinkler system installed in accordance with NFPA 13, 13R, or 13D or Section P2904.
3. *A yard* shall not be required to open directly into a *public way* where the *yard* opens to an unobstructed path from the *yard* to the *public way*. Such path shall have a width of not less than 36 inches (914 mm).

#### **4. R310.2.4 Emergency escape and rescue openings under decks, porches and cantilevers.**

5. *Emergency escape and rescue openings* installed under decks, porches and cantilevers shall be fully openable and provide a path not less than 36 inches (914 mm) in height and 36 inches (914 mm) in width to a *yard* or court.

#### **R314.3 Location.**

Smoke alarms shall be installed in the following locations:

- 1.1. In each sleeping room.
- 2.2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
- 3.3. On each additional story of the *dwelling*, including *basements* and *habitable attics* and not including crawl spaces and uninhabitable *attics*. In *dwellings* or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full *story* below the upper level.
- 4.4. Not less than 3 feet (914 mm) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by this section.
- 5.5. In the hallway and in the room open to the hallway in *dwelling units* where the ceiling height of a room open to a hallway serving bedrooms exceeds that of the hallway by 24 inches (610 mm) or more.

### **R506.2.3 Vapor retarder. (CHANGES FROM SIX TO TEN MIL.)**

A [minimum 10-mil \(0.010 inch; 0.254 mm\)](#) vapor retarder [conforming to ASTM E1745 Class A requirements](#) with joints lapped not less than 6 inches (152 mm) shall be placed between the concrete floor slab and the base course or the prepared subgrade where a base course does not exist.

**Exception:** The vapor retarder is not required for the following:

1. 1. Garages, utility buildings and other unheated *accessory structures*.
2. 2. For unheated storage rooms having an area of less than 70 square feet (6.5 m<sup>2</sup>) and carports.
3. 3. Driveways, walks, patios and other flatwork not likely to be enclosed and heated at a later date.
4. 4. Where *approved* by the *building official*, based on local site conditions.

**R507.3.1** A new table has been added to simplify the footing sizing requirements for decks.

**R507.4** The sizing requirements for deck posts have been revised based on tributary area.

### **N1102.4.6 (R402.4.6) Electrical and communication outlet boxes (air-sealed boxes).**

Electrical and communication outlet boxes installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces. Electrical and communication outlet boxes shall be tested in accordance with NEMA OS 4, *Requirements for Air-Sealed Boxes for Electrical and Communication Applications*, and shall have an air leakage rate of not greater than 2.0 cubic feet per minute (0.944 L/s) at a pressure differential of 1.57 psf (75 Pa). Electrical and communication outlet boxes shall be marked "NEMA OS 4" or "OS 4" in accordance with NEMA OS 4. Electrical and communication outlet boxes shall be installed per the manufacturer's instructions and with any supplied components required to achieve compliance with NEMA OS 4.

### **N1103.3.5 (R403.3.5) Duct testing. (THE EXCEPTION FOR DUCTS IN CONDITIONED SPACES HAS BEEN REMOVED)**

Ducts shall be pressure tested [in accordance with ANSI/RESNET/ICC 380 or ASTM E1554](#) to determine air leakage by one of the following methods:

- 1.1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. Registers shall be taped or otherwise sealed during the test.
- 2.2. Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.

**Exception:** A duct air-leakage test shall not be required for ducts serving heating, cooling or ventilation systems that are not integrated with ducts serving heating or cooling systems.

A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. The licensed mechanical contractor installing the mechanical system shall be permitted to perform the duct testing. The contractor shall have been trained on the equipment used to perform the test.

#### **N1104.1 (R404.1) Lighting equipment.**

All permanently installed lighting fixtures, excluding kitchen appliance lighting fixtures, shall contain only high-efficacy lighting sources.

#### **P2905.3 Hot water supply to fixtures. (PREVIOUSLY HOT WATER SUPPLY WAS UNLIMITED)**

The *developed length* of hot water piping, from the source of the hot water to the fixtures that require hot water, shall not exceed 100 feet (30 480 mm). Water heaters and recirculating system piping shall be considered to be sources of hot water.

#### **E3601.8 Emergency disconnects.**

For *one- and two-family dwelling* units, all service conductors shall terminate in disconnecting means having a short-circuit current rating equal to or greater than the available fault current, installed in a readily accessible outdoor location. If more than one disconnect is provided, they shall be grouped. Each disconnect shall be one of the following:

- 1.1. Service disconnects marked as follows: EMERGENCY DISCONNECT, SERVICE DISCONNECT.
- 2.2. Meter disconnect switches that have a short-circuit current rating equal to or greater than the available fault current and all metal housings and service enclosures are grounded in accordance with [Section E3908.7](#) and bonded in accordance with [Section 3609](#). A meter disconnect switch shall be capable of interrupting the load served and shall be marked as follows: EMERGENCY DISCONNECT, METER DISCONNECT, NOT SERVICE EQUIPMENT.
- 3.3. Other listed disconnect switches or circuit breakers on the supply side of each service disconnect that are suitable for use as service equipment and marked as follows: EMERGENCY DISCONNECT, NOT SERVICE EQUIPMENT.

Markings shall comply with [Section E3404.12](#). [230.82 (3), 230.85]

#### **E3606.5 Surge protection.**

All services supplying *one- and two-family dwelling* units shall be provided with a surge protective device (SPD) installed in accordance with [Sections E3606.5.1](#) through [E3606.5.3](#).

### E3703.4 Bathroom branch circuits.

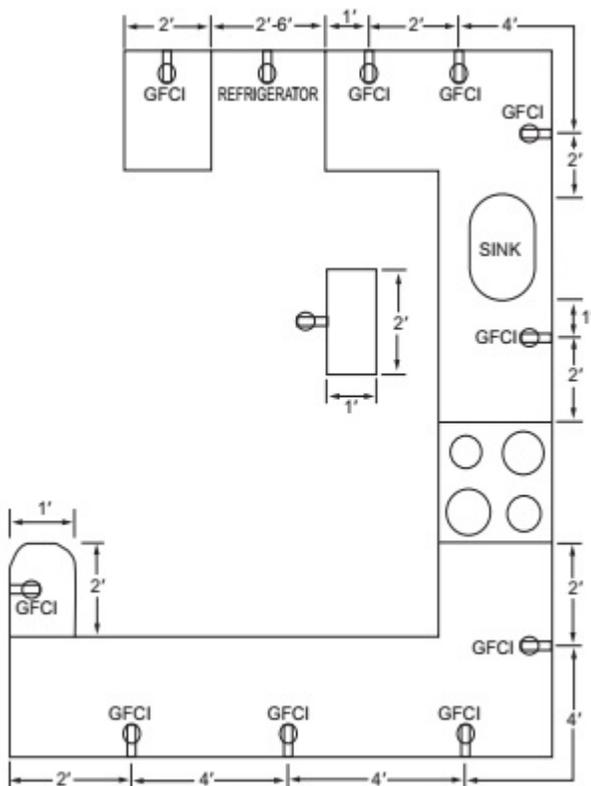
A minimum of one 20-ampere branch circuit shall be provided to supply bathroom receptacle outlet(s) [required by Section E3901.6 and any countertop or similar work surface receptacle outlets](#). Such circuits shall have no other outlets. [210.11(C)(3)]

**Exception:** Where the 20-ampere circuit supplies a single bathroom, outlets for other equipment within the same bathroom shall be permitted to be supplied in accordance with [Section E3702](#). [210.11(C)(3) Exception]

### E3901.4 Countertop and work surface receptacles.

In kitchens pantries, breakfast rooms, dining rooms and similar areas of *dwelling units*, receptacle outlets for countertop and work surfaces [that are 12 inches \(305 mm\) or wider](#) shall be installed in accordance with [Sections E3901.4.1 through E3901.4.3](#) and shall not be considered as the receptacle outlets required in [Section E3901.2](#).

For the purposes of this section, where using multioutlet assemblies, each 12 inches (305 mm) of multioutlet assembly containing two or more receptacles installed in individual or continuous lengths shall be considered to be one receptacle outlet (see [Figure E3901.4](#)). [210.52(C)]



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## SECTION E3902

### GROUND-FAULT AND ARC-FAULT CIRCUIT-INTERRUPTER PROTECTION

(ELIMINATES THE PREVIOUS EXEMPTION FOR 250 AMP CIRCUITS)

#### **E3902.1 Bathroom receptacles.**

125-volt through 250-volt receptacles installed in bathrooms and supplied by single phase branch circuits rated 150 volts or less to ground shall have ground-fault circuit-interrupter protection for personnel. [210.8(A)(1)]

#### **E3902.2 Garage and accessory building receptacles.**

125-volt through 250-volt receptacles installed in garages and grade-level portions of unfinished accessory buildings used for storage or work areas and supplied by single-phase branch circuits rated 150 volts or less to ground shall have ground-fault circuit-interrupter protection for personnel. [210.8(A)(2)]

#### **E3902.3 Outdoor receptacles.**

125-volt through 250-volt receptacles installed outdoors and supplied by single-phase branch circuits rated 150 volts or less to ground shall have ground-fault circuit-interrupter protection for personnel. [210.8(A)(3)]

**Exception:** Receptacles as covered in [Section E4101.7](#). [210.8(A)(3) Exception]

#### **E3902.4 Crawl space receptacles and lighting outlets.**

Where a *crawl space* is at or below grade level, 125-volt through 250-volt receptacles installed in such spaces and supplied by single-phase branch circuits rated 150 volts or less to ground shall have ground-fault circuit-interrupter protection for personnel. Lighting outlets not exceeding 120 volts shall have ground-fault circuit-interrupter protection. [210.8(A)(4), 210.8(E)]

#### **E3902.5 Basement receptacles.**

125-volt through 250-volt receptacles installed in basements and supplied by single phase branch circuits rated 150 volts or less to ground shall have ground-fault circuit-interrupter protection for personnel. [210.8(A)(5)]

**Exception:** A receptacle supplying only a permanently installed fire alarm or burglar alarm system. A receptacle installed in accordance with this exception shall not be considered as meeting the requirement of [Section E3901.9](#). Receptacles installed in accordance with this exception shall not be considered as meeting the requirement of [Section E3901.9](#). [210.8(A)(5) Exception]

#### **E3902.6 Kitchen receptacles.**

125-volt through 250-volt receptacles that serve countertop surfaces and are supplied by single-phase branch circuits rated 150 volts or less to ground shall have ground-fault circuit-interrupter protection for personnel. [210.8(A)(6)]

#### **E3902.7 Sink receptacles.**

125-volt **through 250-volt** receptacles that are located within 6 feet (1829 mm) of the top inside edge of the bowl of the sink **and supplied by single phase branch circuits rated 150 volts or less to ground** shall have ground-fault circuit-interrupter protection for personnel. [210.8(A)(7)]

### **E3902.8 Bathtub or shower stall receptacles.**

125-volt **through 250-volt** receptacles that are located within 6 feet (1829 mm) of the outside edge of a bathtub or shower stall **and supplied by single-phase branch circuits rated 150 volts or less to ground** shall have ground-fault circuit-interrupter protection for personnel. [210.8(A)(9)]

### **E3902.9 Laundry areas.**

125-volt **through 250-volt** receptacles installed in laundry areas **and supplied by single-phase branch circuits rated 150 volts or less to ground** shall have ground-fault circuit-interrupter protection for personnel. [210.8(A)(10)]

### **R-402.1.2 Ceiling R-Value has raised from R-49 to R-60.**

### **R403.5.2 Hot water pipe insulation. (THIS HAS BEEN CODE FOR SEVERAL CYCLES BUT HAS NOT BEEN ENFORCED UNTILL THIS CYCLE)**

Insulation for service hot water piping with a thermal resistance, *R*-value, of not less than R-3 shall be applied to the following:

- 1.1.Piping  $\frac{3}{4}$  inch (19.1 mm) and larger in nominal diameter **located inside the conditioned space**.
- 2.2.Piping serving more than one dwelling unit.
- 3.3.Piping located outside the *conditioned space*.
- 4.4.Piping from the water heater to a distribution manifold.
- 5.5.Piping located under a floor slab.
- 6.6.Buried piping.
- 7.7.Supply and return piping in **circulation and** recirculation systems other than **cold water pipe return** demand recirculation systems.