



(540) 967-3430

COUNTY OF LOUISA
COMMUNITY DEVELOPMENT
www.louisacounty.com

Fax (540) 967-3486

2018 Virginia Residential Code Significant
Changes

R315.5 Carbon Monoxide Alarm Interconnectivity

- For Two-Family Dwellings without Fire Separation Constructed per Exception #3 of R302.3 - If CO alarms are required, they must be interconnected such that one alarm must activate all alarms in both dwelling units.

R308.4.2 Glazing Adjacent to Doors

Glazing within 24" of the hinge side of an in-swinging door now requires safety glazing where the glazing is less than 180 degrees from the plane of the door.

- The Glazing adjacent to doors section has been modified to be more specific regarding safety glazing on the hinge side near an inswinging door
- The term "perpendicular" has been replaced with "less than 180 degrees from" which now covers windows installed at an angle.
- This is to cover a scenario where a wall adjacent a door is not on the same plane (180 degrees) or a perpendicular plane (90 degrees)

R311.7.1, R311.7.8 Handrail Projection

A new exception to the handrail projection limitation provides for adequate clearance behind the handrail when it passes a projection of a floor, landing, or tread return.

- H311.7 Stairways, has been updated with a number of changes
 - The details for handrails have been moved to its own section (now R311.7.8.2 Handrail Projection) and an exception has been added that allows the distance to be increased to 6.5".
 - The 4.5" did not allow you to maintain your 1.5" clearance for graspability of the handrail in some instances.
 - The "continuity" section has also been updated (R311.7.8.4) and the exceptions have been clarified with more detail about interruptions in the handrail.

R311.7.3 Maximum Stair Rise between Landings

The maximum rise has increased by 4 inches, from 147 to 151 inches.

- This section has been updated to reflect a maximum vertical rise of 151", up from 147".
- This is to allow greater flexibility in stairway design and would allow for 10' walls and 2 ft. truss systems than are more frequently used in today's construction.
- This increases the maximum height of a stairway allowed before a landing would be required - which would allow for a single staircase in certain situations, where a landing would have been otherwise required.

R311.7.5.3 Stair Nosings

Revised text clarifies that nosings must be consistent throughout the stairway.

R311.7.11, R311.7.12 Alternating Tread Devices and Ships Ladders

Alternating tread devices and ships ladders are now permitted as a means of egress for lofts that do not exceed 200 square feet.

- An exception has been added to allow an alternating tread device or ship's ladder to be used for Egress for lofts that do not exceed 200 sqft and where such devices do not provide exclusive access to a kitchen or bathroom.

R312.1 Guards

The guard requirements only apply to the specific portion of a walking surface that exceeds 30 inches above grade.

R314.6 Smoke Alarm Power Source

- Exception now requires a minimum 10-year battery where installed in buildings without commercial power.
- Smoke alarms shall be permitted to be battery operated with a minimum 10-year battery where installed in buildings without commercial power.

R315 – Carbon Monoxide Alarm Connectivity

- ☒ If multiple CO alarms are installed in a dwelling unit, they must be interconnected such that one alarm must activate all alarms in both dwelling units.
- ☒ Physical interconnection is not required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.

R324.6 Roof Access for Photovoltaic Solar Energy Systems

Requirements for roof access and pathways for firefighters have been added.

- The roof access and pathway provisions for firefighters first appeared in the 2012 edition of the International Fire Code (IFC). The new 2018 IRC provisions mirror the latest edition of the IFC, except only those provisions that apply to one- and two-family dwellings and townhouses appear in the IRC.
- The minimum number of pathways is:
 - Two per building on separate parts of the roof.
 - One on the street or driveway side of the dwelling.
 - One on each roof plane with a PV array (or adjacent roof plane).

R324.6.2.2 Solar Panels near Emergency Escape and Rescue Openings

Rooftop-mounted photovoltaic solar energy panels and modules are not permitted to be installed directly below emergency escape and rescue openings (EERO).

A minimum 36-inch wide pathway is required for EERO openings above roof-mounted PV solar panels.

R507.3 Deck Footings

An entirely new section on footing minimum size is added to help describe minimum prescriptive (non-engineered) requirements for an exterior deck footing based on snow load, soil quality, and footing shape and size.

R609.4.1 Garage door labeling

A new VA addition requires garage doors to have permanent labels from manufacturers with design criteria: who manufactured, model/serial, positive and negative wind pressure rating. Test standards should be included. Also the installation instruction drawing reference number.

R703.2 Water Resistive Barrier

Water-resistive barriers must be installed per manufacturer's installation guide and are now required for detached accessory structure.

R703.8.4 Veneer Anchorage through Insulation

Allows brick ties to be fastened through insulated sheathing into wood structural panels (WSP).

R1005.8 Chimney Insulation Shield

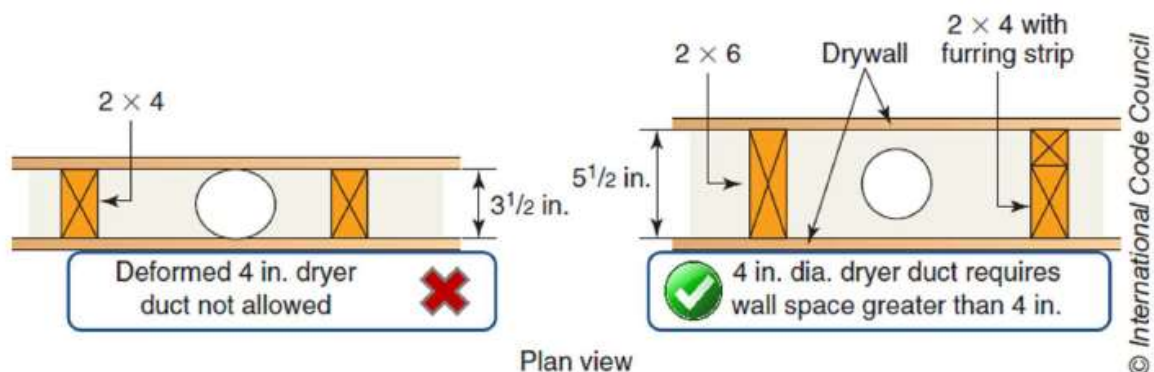
Factory-built chimneys, which have been required to maintain a minimum clearance to insulation, are now required to have an insulation shield to provide the clearance.

• Key requirements of this new section include:

- 26 ga
- clearance per installation instructions
- terminate at least 2" above insulation
- and be secured in place

M1502.4.2 (also VMC 504.8.2, VFGC 614.8.2) Concealed Dryer Exhaust Ducts

Wall and ceiling cavities enclosing dryer exhaust ducts must provide sufficient space that the 4-inch duct is not squeezed out of its round shape. (VA continues to modify this section to not allow fastener penetrations into the duct)



M1601.1.2 Underground Duct Systems

Underground ducts, including both direct-burial ducts and those encased in concrete, require sealing and testing.

G2406.2/ VFGC303.3 Gas-fired Clothes Dryers in Bathrooms

New exception allows a gas-fired clothes dryer in a toilet room or bathroom, with a permanent vent opening.

G2420.5.1 / VFGC 409.5.1 Access to Shutoff Valves for Movable Appliances

Clarifies that shutoff valves behind movable appliances meet the code intent for access.

G2420.6 / VFGC 409.7 Support for Shutoff Valves in Tubing Systems

Shutoff valves in gas tubing systems require rigid support separate from the tubing to prevent damage at the valve connection.

P2503.7 Air Testing of PEX Piping

Compressed-air testing of PEX water-supply piping is now allowed when testing is in accordance with the manufacturer's instructions.

P3003.2 / VPC 705.16.4 PVC to ABS Solvent Cement Joint

One joint between ABS piping and PVC piping may be solvent cemented with the proper cement (ASTM D3138).

P3103.1 Vent Pipe Terminations

The provisions for vent terminals have been reorganized. A new option has been added to allow a 2-inch vent extension through a sloped roof when the vent is covered.

P3114.8 / VPC 918.8 Prohibited Installations (Air Admittance Valves)

"Air admittance valves shall not be installed on outdoor vent terminals for the sole purpose of reducing clearances to gravity or mechanical air intakes."

R401.2/N1101.13 Compliance

Allows the use of REScheck keyed to the 2018 IECC. VA multiplier no longer allowed.

R401.3/N1101.14 Certificate

Permanent certificate listing the predominant R-value, the Ufactors and SHGC to be posted.

Table R402.1.2 Insulation and Fenestration Requirements by Component

Fenestration U-factor has been updated to 0.32

Ceiling insulation values increased from R-38 to R-49, meeting the 2018 IECC.

R402.1.2/N1102.4.1.2; R402.4.1.3/N1102.4.1.3 Testing

The visual inspection of thermal envelope tightness is no longer an option in lieu of blower door testing.

R402.2.2/N1102.2.2 Reduction of Ceiling Insulation

Insulation must extend over the top plate in certain ceilings without attic spaces.

R403.3.6/N1103.3.6; R403.3.7/N1103.3.7 Ducts Buried with Ceiling Insulation

New section provides requirements for ducts buried within ceiling insulation; additional section for deeply buried ducts when using the simulated performance compliance method.

R404.1/N1104.1 Lighting

Percentage of lamps required to be high efficacy increased from 75% to 90%.

Electrical

110 – Reconditioned Equipment

The change to this code section recognizes that equipment can be new, reconditioned, refurbished, or remanufactured but places specific marking and labeling requirements on reconditioned equipment.

110.14(D) Electrical Connection Torque Tools

Calibrated torque measuring tools are now required where numeric torque values are indicated on equipment or manufacturer's installation instructions.

210.8 – Measurements for GFCI Protection

- 210.8 - New language clarifies the measurement requirement
 - "shortest path" without piercing a floor, wall, ceiling, or fixed barrier, or passing through a door, doorway, or window
- 210.8 (7) Sinks
 - Clarification now specifies "...from the top inside edge"

210.8 (E) GFCI Protection: Crawl Space Lighting Outlets

All crawl space lighting outlets, residential and commercial, require GFCI protection

- The new (E) applies to all crawl spaces, residential and Commercial buildings

210.11(C)(4) – Garage Branch Circuits

A new code section was added to require a 20 amp circuit for a dwelling unit garage. This new requirement applies to attached garages or detached garages with electrical power. This circuit is prohibited from feeding other outlets except a readily accessible exterior receptacle outlet GFCI protected.

VRC E3902 – Arc-Fault Protection

This change expands the requirements for AFCI throughout the dwelling unit.

- AFCI required for kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas and similar rooms or areas
- New Exception - Not Required where GFCI protection is required in accordance with E3902 and NEC 210.8(A)

210.52(B)(1) – Exception 2 – Refrigerator Appliance Branch Circuit

Any dwelling unit kitchen appliance is now permitted (by the exception) to be supplied by an individual branch circuit rated 15 amperes or greater

210.52(C)(3) Peninsular Countertop Spaces (E3901.4.3)

The measurement point for peninsular countertops has been changed from the “connecting edge” to the “connected perpendicular wall.”

210.52(G)(1) – Dwelling Unit Garage Receptacles

At least one receptacle outlet is required to be installed “in each vehicle bay and not more than 5½ ft. above the floor.”

210.64 Receptacle at (Indoor) Electrical Service Areas

At least one...receptacle outlet shall be installed in an accessible location within 25-feet of the indoor electrical service equipment, and located within the same room or area.

210.70 (A)(2)(4), VRC E3903.3.1 Additional Locations – Dimmer Switches at Stairways

Additional code language clarifies the use of dimmer switches at interior stairways.

☑ The use of dimmer switches in these locations is now allowed, but only if they provide the full range of dimming control at each location.

☑ Applies to all occupancy types

210.70 (C) Lighting Outlet(s) All Occupancies

This change now applies to all occupancies, for basements, attics, crawl spaces, utility rooms, equipment spaces and storage spaces. The switch shall be located at point of entry and the lighting located at the equipment requiring servicing.

- Changed from “Other Than Dwelling Units” to “All Occupancies”

(C) All Occupancies. For attics and underfloor spaces, utility rooms, and basements, at least one lighting outlet containing a switch or controlled by a wall switch shall be installed where these spaces are used for storage or contain equipment requiring servicing. At least one point of control shall be at the usual point of entry to these spaces. The lighting outlet shall be provided at or near the equipment requiring servicing.

250.52(B)(3) Swimming Pools Not Permitted for Use as a Grounding Electrode

The structures and structural reinforcing steel of an in-ground swimming pool as described in 680.26(B)(1) and (B)(2) are now prohibited from being used as a grounding electrode

314.27 (E) Separable Attachment Fittings

Outlet boxes are now permitted to support listed locking support and mounting receptacles used in combination with compatible attachment fittings for supporting a luminaire, lampholder, or ceiling suspended (paddle) fan.

404.2 (C) & VRC E4001.15 Grounded Conductor at Switch Locations

Revisions were made to the requirement to provide a grounded neutral conductor at specific switch locations.

404.22 Electronic Lighting Control Switches (related to above/previous change)

This new requirement aligns with and provides supporting language for the new changes in 404.2(C) which address electronic lighting control devices that require a neutral return path in order for the circuitry in the switch to function.

408.3 (A)(2) Barriers at Service Panelboards

New requirements added for barriers to be placed in all service panelboards. This has been identified as a safety concern by installers and proponents of electrical safety in the workplace.

422.16 (B) (2) Built-In Dishwashers and Trash Compactors

This change addresses the location of the receptacles and the permitted length of the flexible cords.

- Dishwasher:
 - Outlet in adjacent space only, cord length 3 – 6.5 ft.
- Trash Compactor:
 - Same or adjacent space, cord length 3 –4 ft.

555 Marinas, Boatyards, and Commercial/Noncommercial Docking Facilities

Adopted from 2020 NEC. Now applies to all dwelling unit boat docking facilities.

☒ Virginia adopts the 2020 edition of the N.E.C. for Article 555 only. This change is intended to increase the level of safety around Docks and Marinas and improve requirements for GFCI protection, GFPE Protection and Bonding requirements for public safety.

☒ This includes a Change to Scope to include docking facilities associated with One Family, Two Family dwellings, multifamily and residential condominiums

☒ Article 555 was completely re-written with an expanded requirement on where exactly what type of ground fault protection shall be used. Also, a leakage current measurement requirement was added.

- Shore Power Receptacles – not exceeding 30mA GFPE
- Receptacles for other than shore power- GFCI for 125V, single phase, 15 & 20
- Feeder & Branch-Circuit conductors – not exceeding 100mA GFPE
- Where more than 3 receptacles provide for shore power to boats, a leakage current measurement device shall be available.

555.10 (2020) Signage - Marinas, Boatyards, and Commercial/ Noncommercial Docking Facilities

New requirement for precautionary signage clearly visible from all approaches

- New signage requirement for precautionary signage related to electric shock hazard in water around marinas and boatyards.
- Signage must comply with 110.21(B)(1) and be clearly visible from all approaches to a marina or boatyard facility. (by land OR sea)
- The signs shall state: **WARNING—POTENTIAL SHOCK HAZARD—ELECTRICAL CURRENTS MAY BE PRESENT IN THE WATER**