

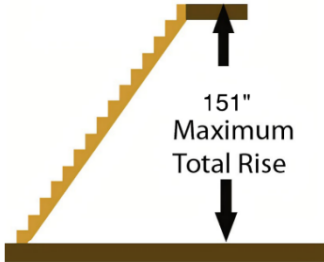



The 2018 edition of the Virginia Construction Code will apply to all permit applications submitted on or after July 1, 2022. This is a summary of important changes adopted in the 2018 edition of the code. This is not a comprehensive list of every change.

Structural

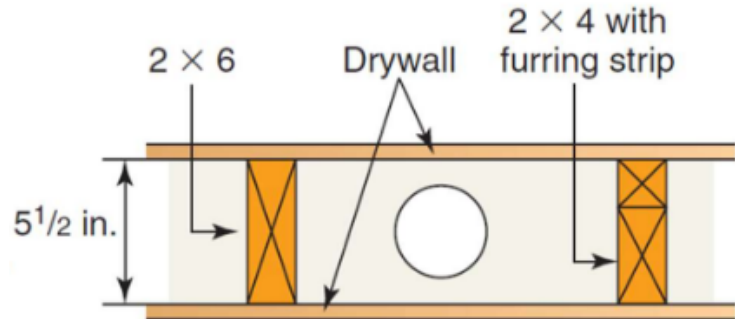
| Code Section | Requirement | What Changed |
|---|--|---|
| County Policy (Based on R301.1.3, R401.4 & R403.1.8) | Chesterfield County has updated the Residential Soil Testing and Footing Design Requirements policy. | Soil testing methods updated to current code requirements. The footing design for non-expansive soils shall comply with the current code. See attached soil policy. |
| Table R302.1(1) | Projections can now be less than 5' from the property line if it is 1 hour rated on the underside, or heavy timber, or fire-retardant treated wood |  <p>Previously projections within 2 feet of the property line were not allowed and from 2 feet to 5 feet had to be 1 hour fire rated. Additional options of how to achieve the rating were added.</p> |

| Code Section | Requirement | What Changed |
|--------------|---|--|
| R310.3 | When an emergency escape and rescue opening is below the adjacent grade, an area well shall be provided. Area wells shall be at least 36" wide. |  <p>New section added.</p> |
| R311.7.3 | A flight of stairs shall not have a vertical rise greater than 151 inches between floor levels or landings. |  <p>Previously, maximum rise was 147 inches between floor levels or landings</p> |
| R311.7.11 | Alternating tread devices are allowed to be used as an element of a means of egress for lofts, mezzanines and similar areas of 200 gross square feet or less where such devices do not provide exclusive access to a kitchen or bathroom. | New exception added |


| Code Section | Requirement | What Changed |
|--------------|---|---|
| R315.5 | Where more than one carbon monoxide alarm is required to installed within a dwelling unit, the alarm devices shall be interconnected. | New section added. |
| R317.3 | Staples for preservative treated wood are required to be stainless steel | Previously galvanized staples were allowed. |
| R324.6.2.2 | Rooftop mounted solar panels are not permitted to be installed directly below an emergency escape and rescue opening. A pathway not less than 36 inches wide shall be provided. |  <p>New section added</p> |
| R403.1.6 | The centerline of the anchor bolt shall be located a minimum of 1.75 inches from the edge of the sill plate. | The 2015 code required the anchor bolts to be in the middle 1/3 of the sill plate |

| Code Section | Requirement | What Changed |
|--------------|---|--|
| R408.3 | Dehumidification sized to provide 70 pints of moisture removal per day from every 1000 square feet of unvented crawl space floor area. | An additional option was added for unvented crawl spaces. A dehumidifier can now be used as an alternative to conditioned air and transfer grille. |
| R609.4.1 | Garage doors are required to have permanent labels from the manufacturer with the design criteria | New section added |
| R703.2 | Detached accessory structures now required to have a water resistive barrier. | Detached accessory structures were not required to have a water resistive barrier. |
| N1101.14 | An energy certificate shall be posted near the furnace, electrical panel or utility room. The certificate shall identify energy efficiency information for the building and systems. | New section added |
| N1102.1.2 | The fenestration u-factor has been lowered to 0.32. | Previous code allowed a 0.35 u factor. |
| N1102.1.2 | R-38 ceiling insulation must cover 100% of the ceiling area and extend over top plates without being compressed. If R-38 cannot fit without being compressed, then R-49 is required. | R-38 insulation cannot be compressed. |
| N1102.2.2 | Ceilings without attic spaces are required to have a minimum R-30 insulation and the insulation shall extend over the top of the wall plate to the outer edge. The reduction is limited to 500 square feet. | This clarifies that the insulation must extend to the outside of the wall plate. |

Mechanical


| Code Section | Requirement | What Changed |
|--------------|---|---|
| M1502.4.2 | Where dryer exhaust ducts are enclosed in wall or ceiling cavities the duct shall not be deformed to fit in the cavity. |  <p>Can no longer run dryer exhaust duct in a 2x4 wall cavity.</p> |
| M1502.3.1 | The passageway of dryer exhaust duct terminals shall be undiminished in size and shall provide an open area of not less than 12.5 square inches | Clarifies that the duct cannot be deformed. 12.5 square inches is equivalent to the area in a 4-inch round duct. |
| N1103.3.3 | HVAC Ducts shall be pressure tested to determine air leakage and a written report of the results shall be provided to the code official | Chesterfield County will now require the report to be onsite for the final mechanical inspection. |

Plumbing & Fuel Gas

| Code Section | Requirement | What Changed |
|--------------|---|--|
| P3012 | Relining of building sewers and building drains is now acceptable. |  <p>BEFORE AFTER</p> <p>New section added</p> |
| P3114.8 | Air admittance valves shall not be installed on outdoor vent terminals for the sole purpose of reducing clearances to air intakes | Clarification that vents shall be a minimum 10 feet from intakes. |
| G2447.2 | Commercial cooking appliances are now permitted in dwelling units when installed per an engineered design and the manufacturer's installation instructions. | An exception was added. |

Electrical

| Code Section | Requirement | What Changed |
|--------------|--|--|
| E3902.4 | All lighting outlets not exceeding 120 volts that are located inside a crawl space shall be GFCI protected. | Added the lights to the existing requirement for receptacles. |
| E3703.5 | All attached garages or detached garages with electrical power are required to have at least one 120-volt, 20 ampere branch circuit. This circuit is limited to receptacle outlets in the garage and readily accessible outdoor receptacles. | New section added |
| E3902.16 | AFCI protection 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. AFCI protection is not required where GFCI protection is required. | Expanded the requirement to include additional rooms and areas. Previous code only required AFCI protection in the bedrooms. |

| Code Section | Requirement | What Changed |
|----------------|---|--|
| NEC 336.10 (9) | TC-ER cable identified for pulling through structural members shall be permitted. |  <p>Allows TC-ER cable to be used for installation of whole house generators.</p> |



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Residential Soil Testing and Footing Design Requirements

Updated 7.1.22

SOIL TEST REQUIREMENT

A soil test to determine the potential for expansive soils shall be performed by a Virginia registered design professional (RDP) and a report of the soil test shall be submitted with the building permit application for all new residential dwellings or additions.

Soils meeting provisions 1, 2, and 3 below (all three), or provision 4 below shall be considered expansive:

- 1) Plasticity Index (PI) of 15 or greater, determined in accordance with ASTM D4318 and,
- 2) More than 10 percent of the soil particles pass a No. 200 sieve, determined in accordance with ASTM D422 and,
- 3) More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D422

OR

- 4) Expansion Index greater than 20, determined in accordance with ASTM D4829

The soil testing methods shall utilize ASTM D4318 and D422, or ASTM D4829 to determine if the soil is expansive per the provision listed above. The scope of the soil test including the number and types of borings or soundings, the equipment used to drill or sample, the in-situ testing equipment and the laboratory testing program shall be determined by the RDP.

The test report shall include:

1. The report shall clearly state if expansive or non-expansive soils were encountered based on the provisions listed above.
2. A plot showing the location of the soil investigations.
3. A record of the soil boring and penetration test logs and soil samples.
4. A record of the soil profile

5. Elevation of the water table, if encountered
6. Special design and construction provisions for foundations of structures founded on expansive soils, as necessary

Exceptions:

- 1) A soil test is not required for deck and screen porch additions.
- 2) A soil test is not required for dwelling additions located in the area designated with lower probability of expansive soils on the attached map (page 3).
- 3) The soils will be investigated, and the footing will be designed on site by the RDP during footing excavation. A letter documenting that this will be the course of action must be submitted with the building permit application.

FOOTING DESIGN REQUIREMENT

If soils are determined to be expansive, the footing shall be design by the RDP in accordance with the Virginia Construction Code and the footing design shall be submitted with the building permit application.

If the soils are non-expansive, or exceptions 1 or 2 to the soil test requirement are applicable, the footing may be designed using the prescriptive provisions of the Virginia Residential Code.

If exception 3 to the soil test requirement is applicable, a report from the RDP that designed the footing on site must be submitted documenting the soil conditions and the as built footing design. The report must be sealed by the RDP. The report must be submitted prior to requesting the framing inspection.

CODE REFERENCES

Virginia Residential Code Sections R301.1.3 (engineered design), R401.4 (soil test) & R403.1.8 (expansive soils)

Virginia Construction Code Sections 1808.6 (design for expansive soils), 1803.3.1 (scope of soil investigation) & 1803.6 (soil report)



Probability of Expansive Soils in Chesterfield County

