



Chesterfield County , Virginia Department of Building Inspection

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Structural Checklist for New Construction and Additions

This is a pre-submittal checklist that will be used to evaluate your construction documents prior to accepting the permit application and the plans for permit review. The building permit will not be accepted for review if applicable items on this checklist are not included in your construction documents. Please contact the commercial plan review staff at (804) 748-1057 with any questions regarding this checklist or any other commercial building permit questions. Per the 2015 Virginia Construction Code (VCC), Section 109.3 Engineering Details and VCC Section 1603 Construction Documents, provide:

Risk Category of Building (VCC Table 1604.5)

Live loads (VCC 1603.1.1 and 1603.1.2)

- Floor live load(s) including concentrated load(s)

- Roof live load(s)

Roof snow load (VCC 1603.1.3)

- Flat roof snow load, p_f
- Snow exposure factor, C_e
- Snow load importance factor, I_s
- Thermal factor, C_t
- Drift Surcharge load(s), p_d , where the sum of p_d and p_f exceed 20 psf
- Width of snow drift(s), w

Wind design data (VCC 1603.1.4)

- Ultimate design wind speed (V_{ult}) and Nominal design wind speed (V_{asd}) in MPH (VCC Section 1609.3.1)
- Wind risk category
- Wind exposure and applicable wind direction if more than one wind exposure is utilized
- Applicable internal pressure coefficient
- Components and cladding; the design wind pressures in terms of PSF to be used for the design of exterior component and cladding materials not specifically designed by the structural engineer

Earthquake design data (VCC 1603.1.5)

- Seismic importance factor, I_e , and risk category
- Mapped spectral responses, S_s and S_1
- Site class
- Design spectral response coefficients, SD_s and SD_1
- Seismic design category
- Basic seismic-force-resisting system(s)
- Design base shear (fully calculated)
- Seismic response coefficient(s), C_s
- Response modification factor(s), R
- Analysis procedure used

Geotechnical Information (VCC 1603.1.6)

- Design bearing capacity
- Minimum depth(s) to bottom of footings
- Site class

Special Loads (VCC 1603.1.8)

- Special loads that are applicable to the design of the building structure or portion thereof shall be included

Wood frame shear wall construction (VCC 2505, 2506, 2507)

- Which walls or portions of walls are to be used as shear walls
- Complete shear wall design(s) including the required nailing schedules and panel connection details

Concrete construction documents (VCC 1901.5)

- Specified compressive strength of concrete at the stated stages of construction for which each concrete element is designed
- Specified strength or grade of reinforcement
- Size and location of structural elements, reinforcement, and anchors
- Provision for dimensional changes resulting from creep, shrinkage and temperature
- Magnitude and location of pre-stressing forces
- Anchorage length of reinforcement and location and length of lap splices
- Type and location of mechanical and welded splices of reinforcement

- Details and location of contraction or isolation joints specified for plain concrete
- Minimum concrete compressive strength at time of post-tensioning
- Stressing sequence for post-tensioning tendons
- For structures assigned to Seismic Design Category D, E or F - a statement if slab on grade is designed as a structural diaphragm (see Section 21.10.3.4 of ACI 318)

Masonry construction (VCC 2101.2)

- Masonry shall comply with the provisions of TMS 402/ACI 530/ASCE 5 or TMS 403'

Steel Joist construction (VCC 2207.2)

- Steel joist and girder designations per SJI specifications
- Requirements for design, layout, end support, anchorage, bridging, bridging termination connections, bearing connections to resist uplift and lateral loads
- Special loads, including concentrated loads, non-uniform loads, net uplift loads, axial loads, end-moments, and connection forces
- Special consideration for nonstandard joist and girder configuration profiles, oversized or non-standard web openings, extended ends
- Deflection criteria for live and total loads for non-SJI-standard joists

Conventional light frame construction provisions if used (VCC 2308)

- Floor and roof live loads
- Ground snow loads, P_g
- Ultimate design wind speed V_{ult} and Nominal design wind speed V_{asd} in MPH (VCC Section 1609.3.1; Wind risk category; and Wind exposure
- Seismic Design Category and Site Class
- Design load-bearing values of soils
- Locations of braced wall lines per VCC 2308.3
- Locations of braced wall panels per VCC 2308.9.3
- Method of constructing the braced wall panels per VCC 2308.9.3 (which method, 1-8, will be used as outlined in section 2308.9.3)

Last updated 11/1/19