

2021 Virginia Construction Code

CHAPTER 19 CONCRETE

SECTION 1901 GENERAL

1901.1 Scope.

The provisions of this chapter shall govern the materials, quality control, design and construction of concrete used in structures.

1901.2 Plain and reinforced concrete.

Structural concrete shall be designed and constructed in accordance with the requirements of this chapter and [ACI 318](#) as amended in [Section 1905](#) of this code. Except for the provisions of [Sections 1904](#) and [1907](#), the design and construction of slabs on grade shall not be governed by this chapter unless they transmit vertical *loads* or lateral forces from other parts of the structure to the [soil](#).

1901.3 Anchoring to concrete.

Anchoring to concrete shall be in accordance with [ACI 318](#) as amended in [Section 1905](#), and applies to cast-in (headed bolts, headed studs and hooked J- or L-bolts), post-installed expansion (torque-controlled and displacement-controlled), undercut, [screw](#), and adhesive anchors.

1901.4 Composite structural steel and concrete structures.

Systems of structural steel acting compositely with reinforced concrete shall be designed in accordance with [Section 2206](#) of this code.

1901.5 Construction documents.

The *construction documents* for structural concrete construction shall include:

1. The specified compressive strength of concrete at the stated ages or stages of construction for which each concrete element is designed.
2. The specified strength or grade of reinforcement.
3. The size and location of structural elements, reinforcement and anchors.
4. Provision for dimensional changes resulting from creep, shrinkage and temperature.
5. The magnitude and location of prestressing forces.
6. Anchorage length of reinforcement and location and length of lap splices.
7. Type and location of mechanical and welded splices of reinforcement.
8. Details and location of contraction or isolation *joints* specified for plain concrete.
9. Minimum concrete compressive strength at time of posttensioning.
10. Stressing sequence for posttensioning tendons.
11. For structures assigned to *Seismic Design Category D, E or F*, a statement if slab on grade is designed as a structural *diaphragm*.

1901.6 Special inspections and tests.

Special inspections and tests of concrete elements of buildings and structures and concreting operations shall be as required by [Chapter 17](#).

1901.7 Tolerances for structural concrete.

Where not indicated in *construction documents*, structural tolerances for concrete structural elements shall be in accordance with this section.

1901.7.1 Cast-in-place concrete tolerances.

Structural tolerances for cast-in-place concrete structural elements shall be in accordance with [ACI 117](#).

Exceptions:

1. Group R-3 detached one- or two-family dwellings are not required to comply with this section.
2. Shotcrete is not required to comply with this section.

1901.7.2 Precast concrete tolerances.

Structural tolerances for precast concrete structural elements shall be in accordance with [ACI ITG-7](#).

Exception: Group R-3 detached one- or two-family dwellings are not required to comply with this section.

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