CONCRETE ONTARIO
Ready Mixed Concrete Association of Ontario

CONCRETE ZERO

TECHNICAL SPECIFICATION
OBC Residential Concrete Requirements

The **Ontario Building Code (OBC)** sets the mandatory requirements for residential building construction in Ontario, including residential concrete applications. These must comply with OBC Part 4 and Part 9, which take precedence over CSA A23.1. The following outlines the minimum requirements for the relevant applications:

OBC Residential Concrete Requirements

Description of usage	Maximum water/ cementing materials (w/cm) ratio	Minimum 28d compressive strength, MPa	Air content, %
Footings for walls, columns, fireplaces, and chimneys, foundation walls, grade beams, piers, and all other applications	0.70*	15*	**
Interior floors other than those for garages and carports, and not exposed to freezing and thawing or deicing salts	0.65	20***	--
Garage floors, carport floors and all exterior flatwork	0.45	32	**

*9.3.1.1 (1) Except as provided in Sentence 9.3.1.1. (2) and Articles 9.3.1.6. and 9.3.1.7., unreinforced and nominally reinforced concrete shall be designed, mixed, placed, cured and tested in accordance with the requirements for "R" class concrete stated in Section 9 of CSA A23.1, Concrete materials and methods of concrete construction."

**Air content should be determined according to CSA A23.1 Table 4 for the OBC application that correspond with the CSA description.

***Clause 9.16.4.5 of the Ontario Building Code (OBC) 2012 has been removed, which previously specified the requirement for a minimum compressive strength of concrete for floors-on-ground. OBC 2024 no longer allows for concrete with a compressive strength of 15 MPa when dampproofing is provided, and 25 MPa when dampproofing is not provided.

Other basic considerations to bear in mind when placing residential concrete include the following:

- **Cold Weather Requirements (OBC 9.3.1.9) -** When the air temperature is below 5°C , concrete shall be
  - (a) kept at a temperature of not less than 10°C or more than 25°C while being mixed and placed, and
  - (b) maintained at a temperature of not less than 10°C for 72 h after placing.
  - (2) No frozen material or ice shall be used in concrete described in Sentence (1).
- **Concrete in Contact with Sulphate Soil (OBC 9.3.1.3)** - Concrete in contact with sulphate soil, which is deleterious to normal cement, shall conform to the requirements of Clause 4.1.1.6 of CSA A23.1.
- **Protection Against Chemical Attack (OBC 4.2.3.6) -** Where concrete in foundations may be subject to chemical attack, it shall be treated in conformance with the requirements in CSA A23.1, "Concrete materials and methods of concrete construction."
- **Radon requirements (OBC 9.1.1.7)** In addition to all other requirements, buildings in some areas of Ontario may be required to have a vapour barrier under all slabs-on-ground in enclosed areas. A vapour barrier under basement floors might limit concrete bleed during finish and will require collaboration between contractor and concrete supplier.

Sources:
1. *Ontario Building Code – 2024, Ontario Ministry of Municipal Affairs and Housing – Housing Development and Buildings Branch.*