



Southwest  
New Brunswick  
Service Commission

## Cold-temperatures & cement

For builders, cold weather means a bunch of considerations – or a stop to some kinds of construction entirely. Here's a quick rundown on Code-enforceable temperature limits:

**Concrete (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.

Sometimes, things aren't as cut and dried as the above, though. The use of hot-batch mixes from the plant, accelerant, and stronger-than-required mixes may compensate for cold-weather concrete placement: a contractor should be prepared to outline special actions like these in cold-weather situations.

**Mortar (9.20.14.1):** Mortar and masonry shall be maintained at a temperature not below 5°C during installation and for not less than 48 h after installation.

**Stucco: (9.28.6.1):**

1. The base for stucco shall be maintained above freezing.
2. Stucco shall be maintained at a temperature of not less than 10°C during application, and for not less than 48 h afterwards.

**Cold-weather plans required:**

The critical thing to note when setting concrete in temperatures that are less than 10°C - which is a substantive portion of the season in this province - is that the contractor should be prepared to file a detailed plan outlining how the material will be kept at sufficient temperature. In some situations, such as ICF forms, this will be less challenging than, say, setting a concrete slab. It's also important to note that materials exposed to cold temperatures such as existing footings or reinforcing bars, will draw heat away from the concrete. On the upside, the setting of concrete will release heat, something known as an "exothermic reaction," which will assist in keeping temperatures at or above the 10°C required.

Our inspectors understand that combinations of hot-batch concrete and additives may allow concrete to reach its specified design strength far earlier than concrete at ambient temperatures without additives may obtain - and we welcome such data as part of the warming plan.

Also, there are some cold-weather considerations for indoor work as well.

**Drywall mud: (9.29.5.10):** In cold weather, heat shall be provided to maintain a temperature not below 10°C for 48 h prior to taping and finishing and maintained for not less than 48 h thereafter.

In case you and your loved ones are arguing over what the correct indoor temperature should be, here's what the National Building Code of Canada says: "At the outside winter design temperature, required heating facilities shall be capable of maintaining an indoor air temperature of not less than

- a) 22°C in all living spaces,
- b) 18°C in unfinished basements,
- c) 18°C in common service rooms, ancillary spaces and exits in houses with a secondary suite, and
- d) 15°C in heated crawl spaces."