

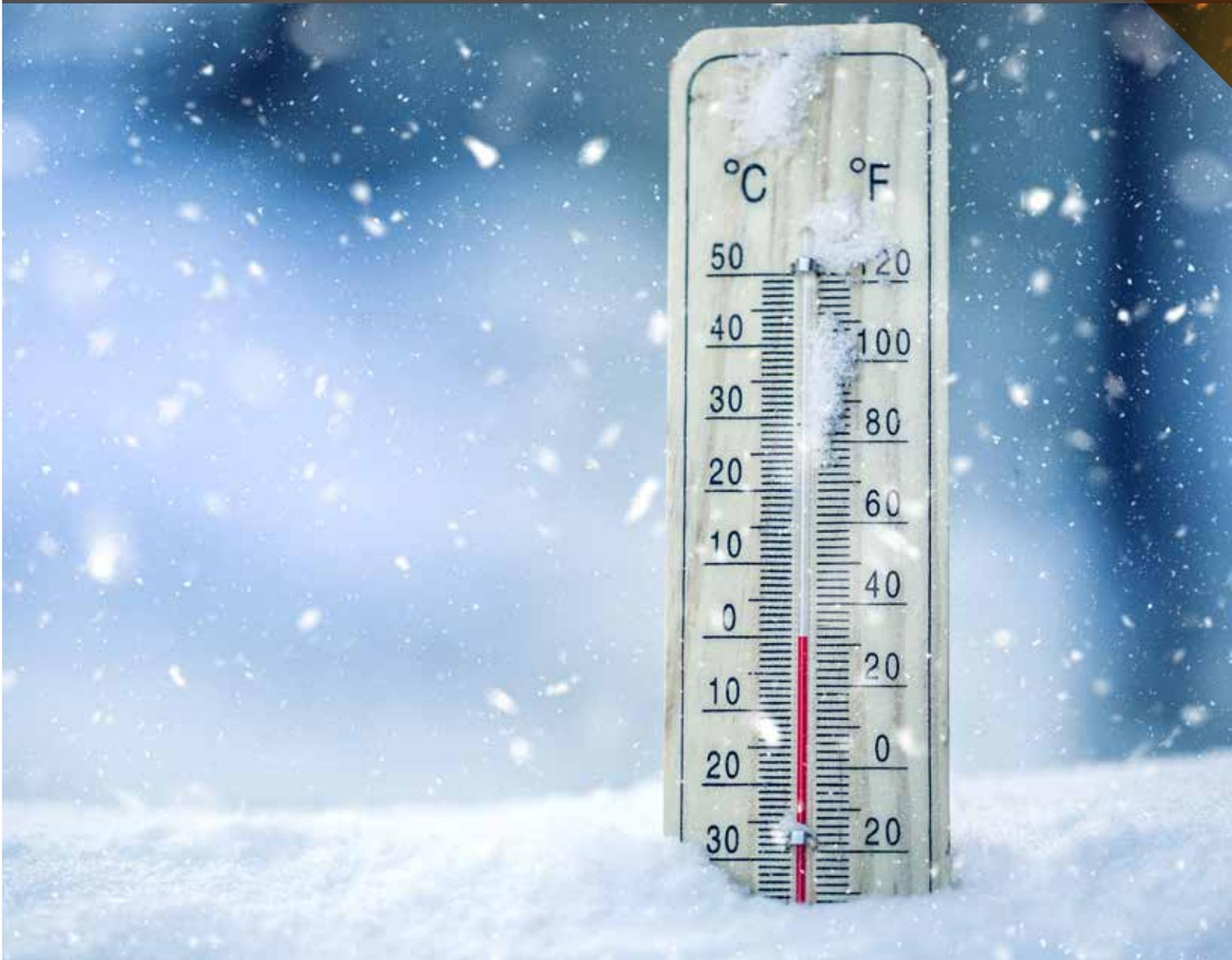


**béton
provincial**

COLD-WEATHER CONCRETING

ACCEL MIX™

READY-MIXED CONCRETE



ACCEL MIX

Our cold-weather concreting solutions

COLD-WEATHER CONCRETING CHALLENGES

10 °C to -10 °C

Vulnerability

In cold weather, freshly poured concrete is vulnerable to freezing because its water content varies between 15% and 18%.

Performance

Very cold temperature will directly impact concrete's performance.

Maturity

To withstand the cold, concrete must develop enough maturity.

Mechanical Properties

Concrete takes on its mechanical properties in the first few hours of the moist-cure process.

Sensitivity

Some structural elements are more sensitive to heat loss.

Development

At low temperatures, very little strength develops in freshly poured concrete with no special formulations.

Protection

To withstand freezing, concrete needs a minimum strength of 3.5 MPa.

Concrete Strength

Concrete must be able to withstand the cold as soon as possible.

Setting Time

Lower temperatures considerably increase setting time and can cause bleeding.

OUR COLD-WEATHER VALUE ADDED SOLUTIONS

SET ACCELERATORS FOR COLD WEATHER			
 Time saved	Ideal mixture for temperatures between 10 °C and -10 °C *	Adapted mixture containing a nonchloride base accelerator	Does not cause steel rebar corrosion
Increased protection at low temperatures	 Reduces the amount of water required	Increased workability retention	 Faster setting time
Increases early strenght	Compatible with concretes with or without entrained air	Improved concrete performance in freezing conditions	Meets CSA A23.1/2 standard requirements

* Warning: ACCEL-MIX is not an anti-freeze. Avoid pouring in extreme, unprotected conditions (e.g. -18 °C).

BASED ON TEMPERATURE*

forecast

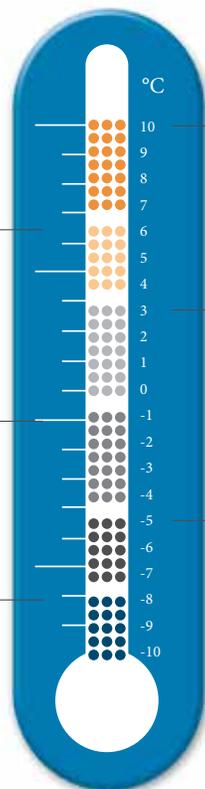
Select the mixture based on ambient temperature forecasts* for 6 to 8 hours after concrete placement.

* Suggested weather standard: meteomedia.com

ACCEL-MIX
between 6 and 4 °C

ACCEL-MIX
between -1 and -4 °C

ACCEL-MIX
between -8 and -10 °C



1 ACCEL-MIX
between 10 and 7 °C

3 ACCEL-MIX
between 3 and 0 °C

5 ACCEL-MIX
between -5 and -7 °C

Setting times are directly affected by the ambient temperature. A 10 °C decrease in the ambient temperature increases concrete setting time and bleeding.

CONCRETE SETTING TIMES AT DIFFERENT TEMPERATURES

AMBIENT TEMPERATURE	REFERENCE TIMES
21 °C	x hours
16 °C	x + 2 hours
10 °C	x + 5 hours
4 °C	x + 8 hours
-1 °C	x + 13 hours
-7 °C	no setting - freeze

Source: Techno-béton no. 12, published by the Association Béton Québec



MIX	TEMPERATURE
 ①	between 10 and 7 °C
 ②	between 6 and 4 °C
 ③	between 3 and 0 °C
 ④	between -1 and -4 °C
 ⑤	between -5 and -7 °C
 ⑥	between -8 and -10 °C

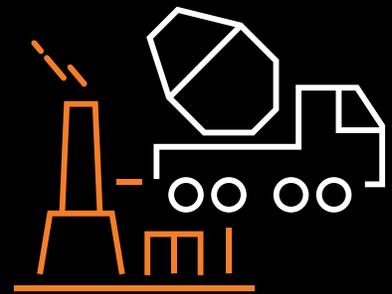
OTHER POSSIBLE OPTIONS ON REQUEST:

- › Use a set accelerator for special concretes, public projects, etc.
- › Use an HE (Type 30) cement depending on availability.

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The Béton Provincial ltée group is an integrated group in the construction industry. Founded in 1960, the company is constantly in search of better solutions for its customers in Quebec and the Maritimes.

NUMBER OF PLANTS BY CATEGORY



85 PLANTS
READY-MIXED CONCRETE



A FLEET OF
OVER 500 CONCRETE MIXERS



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