



City of West Kelowna
2760 Cameron Road, West Kelowna, British Columbia V1Z 2T6
Tel (778)797.1000 Fax (778)797.1001

Advisory Notice for Cold Weather Construction

Winter construction can add challenges to both the building contractor and the local building inspection departments. This notice is intended to bring awareness for cold weather requirements as it relates to the 2018 British Columbia Building Code (BCBC) and best practices during the winter season.

* Please note all references are to the prescriptive measures for Division B of the 2018 British Columbia Building Code unless noted otherwise. Items referenced under Plumbing are for the prescriptive measures for Division B of the 2018 British Columbia Plumbing Code.

Concrete

Article 9.3.1.9. Cold Weather Requirements

- 1) 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).

When the air temperature is below 5°C, including nighttime lows, provisions must be made to protect the concrete from freezing. Curing concrete in cold weather can be achieved using different materials depending on the amount of concrete being cured and the surface being protected. There are a number of materials that when used properly have been shown to increase or produce a constant heat of hydration of the concrete. Some examples (but not limited to):

- Insulating sheets,
- Straw-plastic,
- Heating coils,
- Insulating blankets, and
- Windbreaks.

There are a number of sources for cold weather concrete tips available on the internet the attached link is one of them and is for BC Ready Mixed Concrete Association and their cold weather tips:

http://www.bcrmca.ca/industry_info/technical_resources/concrete-tips-for-cold-weather-climates

Failure to maintain the minimum temperature during the minimum 72 hours (3 days) concrete curing time may result in the City of West Kelowna Building Department requiring a field review by a structural professional engineer. If requested this report must conclude if the design or minimum prescriptive code compressive strength of the concrete has been achieved. A requested field review would be required prior to the approval of drain tile/damp-proof inspections.

Excavation

Article 9.12.1.3. Protection from freezing

- 1) The bottom of excavation shall be kept from freezing throughout the entire construction period.

Material beneath Floors

Article 9.16.2.2. Support of Floors

- 1) Material that is susceptible to changes in volume due to freezing shall not be used as fill beneath floors-on-ground that will be subjected to freezing temperatures. (See also Article 9.4.4.4. and Note A-9.4.4.4.(1).)

Masonry Units

9.20.14.1. Laying Temperature of Mortar and Masonry

- 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.
- 2) No frozen material shall be used in mortar mix.

**Note Manufactured Masonry such as cultured stone or stone veneer is to be installed as per the manufacturers cold weather installation requirements or be installed as per Article 9.20.14.1.*



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Stucco Application

Article 9.28.6.1. Low Temperature Conditions

- 1) The base for stucco shall be maintained above freezing.
- 2) Stucco shall be maintained at a temperature of not less than 10°C for 48 hours prior to application and maintained for not less than 48 hours thereafter.

Gypsum Board Finish

Article 9.29.5.10. Low Temperature Conditions

- 1) Heat shall be provided to maintain a temperature of not less than 10°C for 48 hours prior to taping and finishing and maintained for not less than 48 hours thereafter.

General Requirements for Heating and Air-conditioning Systems

9.33.4.5 Protection from Freezing

- 1) Equipment forming part of a heating or air-conditioning system that may be adversely affected by freezing temperatures and that is located in an unheated area shall be protected from freezing.

Plumbing for Cold Weather Requirements

2.3.5.4. Protection from Frost

Protection of Piping

- 1) Where piping may be exposed to freezing conditions, it shall be protected from the effects of freezing.
(See Note A-2.3.5.4.)

2018 BCBC Note A-2.3.5.4. Protection of Piping Against Freezing. The TIAC “Mechanical Insulation Best Practices Guide” is a comprehensive source of information on the selection, installation and proper use of thermal insulation materials. (Note that Section 4 of this Guide is not included in the scope of this Note as it contains information on proprietary products, which are not within the mandate of the Code.)

Traps

2.4.5.2. Traps for Storm Drainage Systems

- 1) Where freezing conditions could cause *storm drainage systems* to freeze due to air circulation within the piping, a *trap* with a *cleanout* shall be installed in a heated location.

Air Admittance Valves

2.5.9.3. Installation Conditions

- 1) *Air admittance valves* shall not be installed in supply or return air plenums, or in locations where they may be exposed to freezing temperatures.

Application for installation of solvent cemented joints shall be installed as per manufactures specifications. It is recommended that installation practices and methods are adhered to for successful application. Always store cements and primers in a warmer area when not in use and make sure they remain fluid. Read and follow all of the directions carefully before installation.

2.2.5.11 Transition Solvent Cement

- 1) Solvent cement for transition joints shall conform to
 - a) CAN/CSA-B181.1, “ABS Drain, waste, and vent pipe and pipe fittings,” or
 - b) CAN/CSA-B181.2, “PVC and CPVC drain, waste, and vent pipe and pipe fittings.”

Transition solvent cement shall only be used for joining an ABS drainage system to a PVC drainage system.

For Electrical and Gas installations please call or email Technical Safety BC (formerly BC Safety Authority):

Phone: Toll-free 1.866.566.7233 (SAFE)

Email: contact@technicalafetybc.ca

<https://www.technicalafetybc.ca/>