



# PLANNING & BUILDING SERVICES

## COLD WEATHER CONCRETE PLACEMENT AND CURING

### GENERAL INFORMATION

This handout serves as a brief overview on cold weather concrete placement and curing, for more information on specific requirements, please refer to the City of Liberty Lake Building Code.

As outlined in Section 1905.12 of the International Building Code, concrete that is to be placed during freezing or near-freezing weather shall comply with the following:

1. Adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near-freezing weather.
2. Concrete materials and reinforcement, forms, fillers, and ground with which concrete is to come in contact shall be free from frost.
3. Frozen materials or materials containing ice shall not be used.

Due to our geographical location, Liberty Lake is classified as a “Severe Weathering Region.” The following criteria for the use of normal- weight aggregate concrete is recommended where a building is subject to alternating cycles of freezing and thawing. Increased compressive strength of the concrete for the higher weathering should be considered. Also, air entrainment provides a tougher concrete which is better able to resist the effects of deicing chemicals and freezing and thawing.

TABLE 1904.2.2(2)  
MINIMUM SPECIFIED COMPRESSIVE STRENGTH ( $f'_c$ )

TYPE OR LOCATION OF CONCRETE CONSTRUCTION	MINIMUM SPECIFIED COMPRESSIVE STRENGTH ( $f'_c$ at 28 days, psi)		
	Negligible exposure	Moderate exposure	Severe exposure
Basement walls <sup>c</sup> and foundations not exposed to the weather	2,500	2,500	2,500 <sup>a</sup>
Basement slabs and interior slabs on grade, except garage floor slabs	2,500	2,500	2,500 <sup>a</sup>
Basement walls <sup>c</sup> , foundation walls, exterior walls and other vertical concrete surfaces exposed to the weather	2,500	3,000 <sup>b</sup>	3,000 <sup>b</sup>
Driveways, curbs, walks, patios, porches, carport slabs, steps and other flatwork exposed to the weather, and garage floor slabs	2,500	3,000 <sup>b</sup>	3,500 <sup>b</sup>

For SI: 1 pound per square inch = 0.00689 MPa.

a. Concrete in these locations that can be subjected to freezing and thawing during construction shall be of air-entrained concrete in accordance with Table 1904.2.1.

b. Concrete shall be air entrained in accordance with Table 1904.2.1.

c. Structural plain concrete basement walls are exempt from the requirements for special exposure conditions of Section 1904.2.2 (see Section 1909.1.1).

Please note that while every effort is made to assure the accuracy of the information contained in this brochure it is not warranted for accuracy. This document is not intended to address all aspects or regulatory requirements for a project and should serve as a starting point for your investigation.

For detailed information on a particular project, permit, or code requirement refer directly to applicable file and/or code/regulatory documents or contact the City of Liberty Lake Planning & Building Services.

**FOR MORE INFORMATION PLEASE CONTACT:**

LIBERTY LAKE PLANNING AND BUILDING SERVICES  
22710 E. COUNTRY VISTA DRIVE, LIBERTY LAKE, WA 99019  
TELEPHONE: (509) 755-6707, FAX: (509) 755-6713  
[WWW.LIBERTYLAKewa.GOV](http://WWW.LIBERTYLAKewa.GOV)