

BUILDING SAFETY PROFESSIONALS OF SOUTHWESTERN IDAHO

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COLLABORATIVE INTERPRETATION AND/OR DETERMINATION OF THE PROVISIONS OF THE STATE ADOPTED BUILDING CODES

August 2026

International Residential Code (IRC), International Building Code (IBC),
and American Concrete Institute (ACI)

General Topic: Cold Weather Concrete Placement.

Consigning Jurisdictions: Boise County, Canyon County, Elmore County, Gem County, Owyhee County, Payette County, Valley County, Washington County, City of Boise, City of Caldwell, City of Cambridge, City of Crouch, City of Eagle, City of Fruitland, City of Greenleaf, City of Homedale, City of Horseshoe Bend, City of Marsing, City of McCall, City of Melba, City of Meridian, City of Middleton, City of Mountain Home, City of Nampa, City of Notus, City of Parma, City of Payette, City of Star, City of Wilder

Cold Weather Concrete Placement Defined: When air temperature has fallen to, or is expected to fall, below 40°F during the protection period. The protection period is defined as the time recommended to prevent concrete from being adversely affected by exposure to cold weather during construction.

Protection During Cold Weather: In cold weather it is important to protect newly placed concrete from freezing and to maintain curing conditions to ensure adequate strength development. Concrete that does not attain acceptable strength must be removed. It has been shown through data analysis that if concrete freezes, it does not continue to gain strength in a manner consistent with normal concrete performance. The IRC and IBC reference the ACI 318 Standard which references the ACI 306 Standard, Guide to Cold Weather Concreting. Practices noted below are intended to align with these Standards.

Construction Practices: Follow provisions of the ACI Standards or the summary of practices noted below.

- Subgrade shall not be frozen prior to concrete placement. Subgrade, forms, and reinforcement shall be above 32 degrees F and shall be protected from dropping below 32 degrees F prior to concrete placement.
- The subgrade may be thawed by using a thermal blanket or an external heat source. The subgrade may have to be recompact after complete thawing.
- All surfaces to receive concrete and spaces to be filled with concrete shall be free of snow, ice, and standing water before placement.
- Concrete placements must be protected with insulating materials immediately upon placement completion and surface temperature of concrete must be maintained at a minimum of 50° F for a minimum of 3 days (72 hours) during cold weather. Commonly used insulating materials include polystyrene foam sheets, urethane foam, foamed vinyl blankets, mineral wool, or cellulose fibers, straw, and insulated blankets or batt insulation. When selecting insulated blankets when supplementary heat is not used, refer to Table 9.3b below from ACI 306, Guide to Cold Weather Concreting.
- If average daily temperature falls below 20° F, concrete must be heated continuously for 3 days (72 hours) by utilizing methods such as heated enclosures with an approved type of heat source. Fuel fired heaters shall be adequately vented to the exterior.
- When placing high early strength concrete or utilizing approved accelerators, Type III Portland cement, or where the cement ratio is increased to 600 lbs. per yard or at a 4,000-psi mix, the concrete shall be protected from freezing at a temperature of 50° F for at least 2 days (48 hours).
- If footings were required to be protected from freezing, foundation walls will not be allowed to be placed for at least 2 days (48 hours). Exception: If protection from freezing (of the footings or the system) can be maintained for a period specified above, the wall may be placed after 24 hours has elapsed from the time of original footing pour completion.

Minimum ambient exposure temperatures (forecasted) shown in the applicable Table below shall be used to determine when protection is required with the appropriate R-value insulated blanket(s).

Table 9.3b - Minimum exposure temperatures (in degrees) for concrete slabs above ground and walls for concrete placed and surface temperature maintained for 50 degrees F for three days:

Wall Thickness	Cement Content = 400lb/yd (4.26 sack)			
	R-2	R-4	R-6	R-8
6	44	38	32	26
8	41	33	25	17
10	39	29	19	10
12	37	24	12	10
18	30	12	10	10
24	25	10	10	10

Wall Thickness	Cement Content = 500lb/yd (5.32 sack)			
	R-2	R-4	R-6	R-8
6	43	35	28	20
8	40	29	20	10
10	37	24	12	10
12	34	18	10	10
18	25	10	10	10
24	18	10	10	10

Wall Thickness	Cement Content = 600lb/yd (6.38 sack)			
	R-2	R-4	R-6	R-8
6	41	32	23	14
8	37	25	13	10
10	34	19	10	10
12	31	12	10	10
18	21	10	10	10
24	11	10	10	10

Inspection Process:

- Inspectors will only approve concrete placement for the same day as the inspection.
- Inspectors will be checking for frozen ground and whether appropriate protection blankets or other materials are on site.
- Concrete batch tickets may be required to determine departure time, concrete strength, and additives.
- If the inspector determines the concrete has not been properly protected in accordance with ACI standards, additional testing and engineering may be required.
- Check www.weather.com for consistent weather and temperature information.