



VILLAGE OF LINCOLNWOOD

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Cold Weather Concrete Requirements

Methods of protection for footings and foundations:

Methods of protection noted below are acceptable for temperatures of **between** 20 and 40 degrees.

- Temperature shall be a minimum of 20 degrees and rising at time of pour
- Insulated Blankets – double R-5.1 blankets for a minimum of 72 hours
- Insulated Forms – insulation value equal to blanket requirements

Methods of protection for temperatures **below** 20 degrees.

- Heated weather-resistive enclosures enveloping the footing and/or walls. The heat provided should maintain a minimum concrete temperature of 50 degrees until the concrete attains strengths of 500 psi (usually 3 days) and double R-5.1 blankets.
- The heating enclosure heating source shall be vented to the exterior. If the heater is fueled by propane, kerosene or petroleum products, the fume can cause damage to the fresh concrete and cause premature carbonation. The exposed area will experience a dusting of the surface which will reduce its strength and durability.
- At the end of the protection period, concrete should be cooled gradually to reduce crack-inducing differential strains between the interior and exterior of the structure.

Methods of protection for interior and exterior concrete slabs:

- Heated weather-resistive enclosures enveloping the concrete slab. The heat provided should maintain a minimum concrete temperature of 50 degrees until the concrete attains strengths of 500 psi (usually 3 days).
- The heated enclosure heating source shall be vented to the exterior. If the heater is fueled by propane, kerosene or petroleum products, the fume can cause damage to the fresh concrete and cause premature carbonation. The exposed area will experience a dusting of the surface which will reduce its strength and durability.
- At the end of the protection period, concrete should be cooled gradually to reduce crack-inducing differential strains between the interior and exterior of the structure.

More information for cold weather concrete requirements can be found in Chapters 4 and 5 of ACI318, ACI 306.1-90 and referenced ASTM standards.