



Cold Weather Concrete Policy

(adapted from the Mid Iowa Construction Code Committee)

1. **Purpose**

1.1 The Purpose of this policy is to regulate the placement of concrete during cold weather by providing minimum standards.

2. **Scope**

2.1 This policy shall apply to all new or replacement concrete that is placed during cold weather, as determined by Sec. 4 of this policy. This shall include but is not limited to footings, foundations, sidewalks, and approaches.

3. **General**

3.1 Local jurisdictions have the power to render interpretations of the building code, adopt, enforce rules and supplemental regulations to clarify the application of its provisions.

4. **Application**

4.1 Concrete may not be placed when the National Weather Service predicts a low temperature of 10° Fahrenheit or colder during the following 24 hours. Concrete inspections will not be scheduled.

4.2 Installation of slab-on-grade concrete and typical residential footings shall comply with the requirements of Section 5 of this policy when the National Weather Service predicts a low temperature of 32° Fahrenheit or colder during the following 24 hours.

4.3 Installation of thin section concrete walls (typical residential basement walls) shall comply with Section 5 of this policy when the National Weather Service predicts a low temperature of 25° Fahrenheit or colder during the following 24 hours.

5. **Requirements**

5.1 Air entrained concrete must be used when exposure to moisture and freezing and thawing conditions are expected.

5.2 Concrete cannot be placed on the frozen subgrade. It may be possible to thaw a few inches of frost using heat, blankets or remove the frost and regrade with appropriate compacted material.

5.3 Dry calcium chloride cannot be field added to ready mix concrete. Calcium chloride and other admixture must be according to manufacturer' specification and guidelines

5.4 Concrete must not be allowed to freeze for a minimum of 48 hours after placement; or until it reaches a strength of 5000 psi as determined by laboratory testing. In order to satisfy curing requirements of a minimum of 50° Fahrenheit, any approved method of protecting the concrete (blankets, straw, tenting, etc.) must remain in place and effective for the minimum 48 hours, Forms may be removed during the curing period, provided that the protection is reinstalled and effective until the 48-hour period has expired.

6. **Recommendations**

6.1 Humidity is normally lowered when heating an enclosure. Membrane-forming curing compounds should be used to ensure that the concrete surface does not dry out too soon and cause plastic shrinkage cracks

6.2 Fossil fuel-burning heater can cause carbonation of newly placed concrete surfaces. This may cause unacceptable dusting. Therefore, combustion byproducts must be vented from enclosures.

6.3 During cold weather, the concrete mix should be increased from 3500 psi to 4000 psi, or another high early strength mix should be added.