
COLD WEATHER CONCRETE REQUIREMENTS

Ref: IBC 1905.11 & 1905.12

Low air temperatures during curing of concrete and masonry work can affect their characteristics both temporarily and permanently. All types of concrete cure slower in cold temperatures and thus develop their ultimate design strengths over longer-periods of time than would be normal for temperatures above 50° F. Concrete that is exposed to temperatures less than 30° F without protection may actually freeze. Depending on how early in the curing process the freezing occurs, permanent damage and reduction in strength may take place. In most cases, however, upon warming up, curing will continue and design strength may even eventually be reached, but most of the time, durability under stress will be adversely affected.

Based on these facts and the references listed-above, the Payson City Building Safety Department has determined that the following requirements must be met for all un-engineered footings and foundations poured during cold weather. *These requirements are not adequate for other types of pours such as structural slabs, walls and beams or for foundations that will be loaded immediately.*

- Rebar, forms, fillers and ground against which concrete will be poured shall be free from all ice, snow and frost.
- Wind protection is required when air temperatures are below 35° f. Otherwise, rapid cooling takes place.
- During freezing weather, pours should be scheduled for mornings in order to avoid immediate nighttime low temperatures.
- Protection:
 1. 30° - 25° F Weather resistive membrane for 3 days minimum
 2. 25° - 20° F Insulation blankets or insulation covered with a weather resistive membrane for 3 days minimum
 3. Below 20° Provide supplemental heat under a weather resistive membrane for 3 days minimum

Protection for the first 24 hours is the most important. All protection equipment shall be on the job at the time of inspection.

If you have any questions, please feel free to call any of our staff at 465-5204