# Cold Weather Concrete & Masonry Construction

Requirements below 40° F

## General

- No concrete or masonry work shall begin before 6:00 am (and no power equipment shall be ran before 7:00 am by City Ordinance), unless the ambient air temperature at 6:00 am is a minimum of 0* and expected to rise.
- All materials shall be covered if necessary to keep dry, and any masonry laid shall be free of ice and snow.
- Concrete delivered in cold weather should have the applicable *minimum* temperatures indicated in this table:

| Air Temperature | Thin sections & unformed slabs | Heavy sections & mass concrete |
|---|---|---|
| 30 – 45˚ F | 60˚ | 50˚ F |
| 0 – 30˚ F | 65˚ | 55˚ F |
| Below 0˚ F | 70˚ | 60˚ F |

*The maximum temperature of concrete produced with heated aggregates, heated water, or both, should at no time during its production or transportation exceed 90* F.*

## Footings & Poured Walls

- DO NOT place footings on frozen soils. Footings and adjoining soil must be protected from freezing.
- After forms are in place, use adequate insulating blankets to prevent frost from penetrating the soil.
- Immediately after concrete is poured it must be covered with insulating blankets. Straw or hay is not allowed as an insulator.
- No masonry/concrete work may be done, or forms be removed, within ***24 hours*** of placement.

## Mortar & Grout

- Wind breaks are required if wind is 15 mph or greater.
- Temperatures 40°F - 32°F Construction Requirements: Heat materials to produce mortar or grout between 40°F - 120°F (4°C - 49°C).
- Temperatures 32°F and below Construction Requirements: Heat materials to produce mortar or grout between 40°F - 120°F (4°C - 49°C). Maintain temp for mortar or grout above freezing until used in masonry.
- In cold weather conditions, accelerate initial set time of mortar or grout materials by using one of these methods:
  1. Type III may be used in place of Type I for faster initial set time and faster initial strength gain.
     a. Set accelerated pre-blended mortar may be used for faster initial set time and faster initial strength gain.
     b. A liquid accelerator may be added to mortar for faster initial set time and faster initial strength gain.
     c. Mortar should be mixed in smaller amounts so it can be used before it cools.
  2. Every effort should be made to produce consecutive batches of mortar with consistent temperatures.
  3. Cover walls with wind-resistant materials to prevent rapid heat loss or water from entering masonry.