

Cold Weather – Masonry & Concrete

2015 MBC / 2015 MRC



Cold Weather Masonry: Proper cold weather construction practices shall be used when the air temperature falls below **40° F**, or when the temperature of masonry units is below **40° F**.

Preparation: Temperatures of masonry units **shall not be less than 20° F**.

Construction: The following applies to work in progress based on the air temperature.

- **From 40° F to 32° F**, mortar sand or mixing water shall be heated to produce mortar temperatures from **40° F to 120° F** at the time of mixing.
- **From 32° F to 25° F** the mortar temperature shall be maintained above freezing until used.
- **From 25° F to 20° F** masonry surfaces under construction shall be heated to **40° F** and wind breaks provided when the wind velocity exceeds 15 mph.
- **Below 20° F**, use enclosures and auxiliary heat to maintain temperature above **32° F**.

Protection: For new mortared masonry after it is placed, based on average daily temperature.

- **From 40° F to 25° F**, cover all work with a weather-resistive membrane for 24 hours.
- **From 25° F to 20° F**, cover all work with insulated blankets or equivalent for 24 hours.
- **Below 20° F**, maintain temperature of masonry above **32° F** for at least 24 hours by using heated enclosures, electric heating blankets, or other acceptable methods.

Cold Weather Concrete:

- **Below 0° F**, no concrete work is allowed
- **At least 0° F and expected to rise**, work is allowed with proper protection on site
- **Below 40° F**, insulating blankets or equivalent must be on site prior to pouring
- **Protect concrete from freezing**, when poured and at least 5 days after (MBC 1808.8.4)
- **Footings**, shall not bear on frozen soil (R403.1.4.1)
- **Footings**, shall be supported on undisturbed natural soils or engineered fill (R403.1)

Concrete must never be placed on any amount of frozen soil

References: ASTM C-270, ASTM C-94, ACI 306R, ACI 318