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**Reference: Recommended Construction Practices & Protection for Cold Weather
Masonry**

Adapted from Masonry Standards Joint Committee (MSJC) ACI, SEI, The Masonry Society

Cold weather masonry construction may proceed at temperatures below freezing provided mortar/grout ingredients are heated and new masonry construction is protected from freezing ambient temperatures.

Cold weather masonry construction is defined when ambient air temperature is below 40°F. Masonry construction under this definition should have the following practices/procedures implemented (do not lay glass unit masonry when ambient air temperature is below 40°F.)

PREPARATION

- Do not lay masonry units having a temperature below 20°F or containing frozen moisture, visible ice, or snow on placement surface(s).
- Remove visible ice and snow from top surface of existing foundations and/or masonry work that are to receive new construction. Heat these surfaces above freezing while not doing damage to existing structures.
- During cold weather masonry construction, Type III Portland cement (high early) should be considered in lieu of Type I Portland cement to help accelerate setting time. The acceleration reduces curing time and generates heat which is beneficial in cold weather.

CONSTRUCTION

- Do not heat water or aggregates used in mortar or grout above 140°F.
- **Ambient air temperatures 40°F to 32°F** – Heat sand or mixing water to produce an overall mortar temperature between 40°F and 120°F at time of mixing. Grout does not require heated materials unless below 32°F.
- **Ambient air temperatures 32°F to 25°F** – Heat sand or mixing water to produce an overall mortar temperature between 40°F and 120°F at time of mixing. Maintain mortar temperature above freezing until used. Heat grout aggregates and mixing water to produce an overall grout temperature between 70°F and 120°F at time of mixing. Maintain grout temperature above 70°F until used. Heat autoclaved aerated concrete (AAC) masonry units to a minimum of 40°F before installing thin-bed mortar.
- **Ambient air temperatures 25°F to 20°F** – Follow same construction procedures as set forth for 32°F to 25°F, but heat masonry surfaces under construction to 40°F. Use wind breaks or enclosures when wind velocity exceeds 15 mph. Heat masonry to minimum of 40°F prior to grouting.

- **Ambient air temperatures 20°F and below** – Follow same construction procedures as set forth for 25°F to 20°F, but provide enclosures with auxiliary heat to maintain air temperature above 32°F (within the enclosure).

PROTECTION

- Maintain glass unit masonry above 40°F for first 48 hours after placement.
- Maintain AAC masonry above 32°F for first 4 hours after thin-bed mortar placement.
- **Ambient air temperatures 40°F to 25°F** – Protect newly placed masonry using a weather-resistant membrane covering for 24 hours after completion.
- **Ambient air temperatures 25°F to 20°F** – Protect newly placed masonry using weather-resistive insulating blankets, or equivalent, for 24 hours after completion. Extend time period to 48 hours for grouted masonry, unless using Type III cement only.
- **Ambient air temperatures 20°F and below** – Maintain newly placed masonry temperatures above 32°F for at least 24 hours after completion by using heated enclosures, electric heating blankets, infrared lamps, or other acceptable means. Extend time period to 48 hours for grouted masonry, unless using Type III cement only.

For additional information, contact Bob Hiles or Jim Rosebrock at 614.895.1400.

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