



DESIGN TIPS – TECHNICAL BULLETIN #41
COLD WEATHER SETTING PRACTICES

Never set Cast Stone on a frozen or ice covered wall. All masonry bonds will be ineffectual. Cold weather building practices have been developed to protect masonry against the perils of freezing when construction must be carried on in such environments.

Avoid setting stone with mortar in extreme cold. Stonework set in cold (below 40 degree) weather may expand and crack mortar bond in warm temperatures. Calcium chloride will cause efflorescence. (See *Technical Bulletin #33 on Efflorescence*). Mixing water may be heated up to 160 degrees to heat the mortar to between 40F and 120F. Sands may be heated with propane or air blast heaters. All materials must be heated slowly to prevent scorching.

The **International Masonry Industry All Weather Council** recommends the following:

Above 40F: Normal masonry procedure. Cover walls at end of workday to prevent water entering masonry.

40F - 32F: Heat mixing water to produce mortar temperatures between 40F - 120F. Cover walls with plastic or canvas to prevent wetting and freezing.

32F - 25F: Heat mixing water and sand to produce mortar temperatures between 40F - 120F. Cover walls with plastic or canvas to prevent wetting and freezing.

25F - 20F: Heating mixing water and sand to produce mortar temperatures between 40F - 120F. Cover walls with plastic or canvas to prevent wetting and freezing. Mortar on boards should be maintained above 40F. Cover walls and materials at the end of the day to prevent wetting and freezing. Maintain masonry above freezing for 16 hours using auxiliary heat or insulated blankets.

20F - 0F: Heat mixing water and sand to produce mortar temperatures between 40F - 120F. Cover walls with plastic or canvas to prevent wetting or freezing. Mortar on boards should be maintained above 40F. Cover walls and materials at the end of the day to prevent wetting and freezing. Provide enclosures and supply sufficient heat to maintain masonry enclosure above 32F for 24 hours.

Patching should not be done in any environment which may be subject to freezing within 72 hours. ♦