

- BIA Technical Notes #1 June 2006, IBC, and MSJC
- The Chemical reaction between the Portland cement and water are sustainably reduced and become minimal below 40°F
- Keep masonry units warm, as cold masonry units will lower the mortar temperature, slowing the chemical reaction and lowering strength
- Accelerators do **NOT** remove the need to follow these requirements; they only reduce the time for early strength gain.

### Requirements for Masonry Construction in Hot and Cold Weather

	Temperature <sup>1</sup>	Preparation Requirements (Prior to Work)	Construction Requirements (Work in Progress)	Protection Requirements (After Masonry Is Placed)
Normal Weather	100 °F to 40 °F (37.8 °C to 4.4 °C)	Normal Procedures.	Normal Procedures.	Normal Procedures.
Cold Weather	40 °F to 32 °F (4.4 °C to 0 °C)	Do not lay masonry units having either a temperature below 20°F (-6.7°C) or containing frozen moisture, visible ice, or snow on their surface.  Remove visible ice and snow from the top surface of existing foundations and masonry to receive new construction. Heat these surfaces above freezing, using methods that do not result in damage.	Heat mixing water or sand to produce mortar between 40 °F (4.4 °C) and 120 °F (48.9 °C).  Do not heat water or aggregates used in mortar or grout above 140 °F (60 °C).  Heat grout materials when their temperature is below 32 °F (0 °C).	Completely cover newly constructed masonry with a weather-resistive membrane for 24 hr after construction.
	32 °F to 25 °F (0 °C to -3.9 °C)	Comply with cold weather requirements above.	Comply with cold weather requirements above.  Maintain mortar temperature above freezing until used in masonry.  Heat grout materials so grout is at a temperature between 70 °F (21.1 °C) and 120 °F (48.9 °C) during mixing and placed at a temperature above 70 °F (21.1 °C).	Comply with cold weather requirements above.
	25 °F to 20 °F (-3.9 °C to -6.7 °C)	Comply with cold weather requirements above.	Comply with cold weather requirements above.  Heat masonry surfaces under construction to 40°F (4.4°C) and use wind breaks or enclosures when the wind velocity exceeds 15 mph (24 km/h).  Heat masonry to a minimum of 40°F (4.4°C) prior to grouting.	Completely cover newly constructed masonry with weather-resistive insulating blankets or equal protection for 24 hr after completion of work. Extend time period to 48 hr for grouted masonry, unless the only cement in the grout is Type III portland cement.
	20 °F and Below (-6.7 °C and Below)	Comply with cold weather requirements above.	Comply with cold weather requirements above.  Provide enclosure and heat to maintain air temperatures above 32 °F (0 °C) within the enclosure.	Maintain newly constructed masonry temperature above 32°F (0°C) for at least 24 hr after being completed by using heated enclosures, electric heating blankets, infrared lamps, or other acceptable methods. Extend time period to 48 hr for grouted masonry, unless the only cement in the grout is Type III portland cement.

1. Preparation and Construction requirements are based on *ambient temperatures*. Protection requirements, after masonry is placed, are based on *mean daily temperatures*.

