



- ❑ BIA Technical Notes #1 June 2018, IBC, and TMS-402
- ❑ 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. *Color of mortar could be a concern with accelerators, as well as only using them in cold temperatures.*

TABLE 1

Requirements for Masonry Construction in Hot and Cold Weather per the TMS Specification

	Temperature ¹	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	Below 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 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 and 120 °F (4.4 °C and 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).	Protect newly constructed masonry by covering with a weather-resistive membrane for 24 hours after being completed.
	Below 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 between 70 °F and 120 °F (21.1 °C and 48.9 °C) during mixing and placed at a temperature above 70 °F (21.1 °C). Maintain grout temperature above 70 °F (21.1 °C) at the time of grout placement.	Comply with cold weather requirements above.
	Below 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 on both sides to 40 °F (4.4 °C). Use windbreaks or enclosures when the wind velocity exceeds 15 mph (24 km/hour). Heat masonry to a minimum of 40 °F (4.4 °C) prior to grouting.	Cover newly constructed masonry completely with weather-resistive insulating blankets, or equal protection, for 24 hours after completion of work. Extend time period to 48 hours for grouted masonry, unless the only cement in the grout is Type III portland cement.
	Below 20 °F (-6.7 °C)	Comply with cold weather requirements above.	Comply with cold weather requirements above. Provide an enclosure and auxiliary heat to maintain air temperature above 32 °F (0 °C) within the enclosure.	Maintain newly constructed masonry temperature above 32 °F (0 °C) for at least 24 hours, by using heated enclosures, electric heating blankets, infrared lamps or other methods. Extend time period to 48 hours 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 are based on *mean daily temperatures*.