

Tile & Stone Installation Systems

Seasonal temperatures and epoxy grouts

All epoxy-based grouts perform differently as temperatures vary. For example, higher temperatures will accelerate the curing process while cooler temperatures will slow it. This is just one example of how seasonal temperature fluctuations affect an epoxy grout. Below we will discuss how changes in seasonal temperatures affect MAPEI's *Kerapoxy*[®], *Kerapoxy CQ* and *Kerapoxy IEG CQ*.

How do cool/cold conditions affect epoxy grouts?

Storage

Containers of epoxy grout that are exposed to temperatures below 32°F (0°C) during transport or storage may show signs of crystallization or stiffness after they return to room temperature. During the winter and cold months, examine such products before use by opening the container and checking for signs of crystallization or stiffness. Stir "Part A" with a margin trowel. If small "ice-like" particles are visible, the entire kit (with the lid on) should be soaked in warm water for about 20 minutes. The product should be mixed as usual per the instructions included in the bucket. Note that if an epoxy product has been repeatedly frozen and thawed, you may not be able to restore it to a workable consistency.

The components of MAPEI's epoxy grouts are freeze/thaw-stable. In general, epoxy grout components should be stored in heated conditions at room temperature (73°F or 23°C).

Usage

Optimal performance with epoxy grouts is achieved at about 73°F or 23°C, which provides about 45 to 60 minutes of pot life. This data is from testing performed on the MAPEI epoxy grouts. For better grout workability, containers should be allowed to acclimate to room temperature (73°F or 23°C) for at least 24 hours before product use.

As epoxy grouts are exposed to cooler temperatures, their workability is reduced and their pot life is extended. Lower temperatures produce a thicker grout consistency, which will assist in vertical applications and extend the pot life. Lower temperatures also extend the setup time and the time before foot traffic can be permitted. For these reasons, ambient temperature and surface temperature in the installation area should be maintained between 60°F and 90°F (16°C and 32°C) until the epoxy grout has hardened sufficiently (after 24 to 72 hours).



Temporary heating equipment may be necessary to maintain recommended temperatures. If propane or gas-fired heating is being used, ensure that the area has sufficient ventilation, thereby avoiding safety issues and any discoloration of the epoxy grout from exposure to exhaust fumes.

How do warm/hot conditions affect epoxy grouts?

Storage

Epoxy grout should be stored in a cool, dry location away from direct sunlight. It is not

a requirement to protect epoxy grout containers from heat during shipping and storage. During the summer and hot months, when temperatures are above 85°F (29°C), containers stored in a climate-controlled area with a room temperature of 73°F (23°C) will optimize product performance. This data is from testing performed on the MAPEI epoxy grouts.

Usage

Epoxy materials become thinner and more workable at higher temperatures. This increased fluidity of the material may create issues when installing epoxy in vertical applications, as the product may slump out of large joints.

Very warm temperatures, over 90°F (32°C), will dramatically accelerate the chemical reaction of epoxy grouts, resulting in rapid setup time and reduced pot life. For example, the pot life will be reduced by half for every 12 to 15 degrees Fahrenheit above 73°F (7 to 9 degrees Celsius above 23°C).

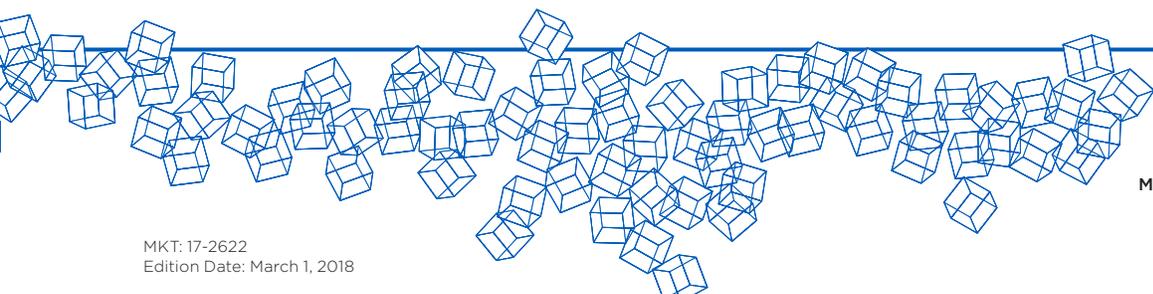
Follow these strategies for effectively installing epoxy grout in warm/hot conditions:

- Mix the grout at a low speed and do not exceed the prescribed time for mixing.
- Placing an epoxy grout kit in ice water for 20 minutes to cool the product before mixing will extend the pot life and working time.
- Begin the installation process by cleaning the floor with water. This will clean, cool and fill micro-pores in the tile surface. Use caution not to leave excess water in the grout joints during this process.
- Do not apply epoxy grouts in direct sunlight, because the tile's surface temperature can be significantly higher than the ambient temperature.

When a tile surface is exposed to the sun, the surface temperatures can rise quickly. For example, if the ambient temperature is 75°F (24°C), exposure to direct sunlight can heat the tile surface to 140°F (60°C) or greater in one hour or less. Maintain the installation site and surface temperature at below 95°F (35°C) during application and for at least 24 hours afterward.

- Plan for additional effort and manpower to compensate for the difference in coverage and cleanup times. Also, plan to install during the cooler times of the day, such as the evening or morning.
- Apply the epoxy grout to the floor and immediately distribute it into small piles. This will act to cool and slow the reaction of the epoxy grout. Spread the full unit of epoxy grout before beginning the cleanup process.
- During cleanup, use plenty of cool/cold water. Some installers have found that melting ice into the cleaning water is especially effective in hot conditions.

Jobsite conditions vary and may present circumstances not covered in this document. For the most current product information, visit www.mapei.com or contact MAPEI's Technical Services Product Support Team.



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MAPEI Headquarters of North America
1144 East Newport Center Drive
Deerfield Beach, Florida 33442
1-888-US-MAPEI (1-888-876-2734) /
(954) 246-8888