



CERAMIC TILE INSTITUTE OF AMERICA, INC.
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CTI FIELD REPORT 68-2-4 (R-86)

SUBJECT: Hot Weather Grouting

We often warn about hot weather grouting without giving adequate information on the subject. When is hot-too hot? What procedures should be observed when grouting? What should be done to assure a hard, dense joint in hot weather?

1. The best setting and curing temperature for grout is 70 degrees F.
2. Hot weather practices should be used when temperatures reach 85 degrees F or higher.
3. Hot weather practices include the following:
 - a. Cool water and materials.
 - b. Prevention of water loss.
 - c. Careful scheduling of work.
 - d. Protection against water evaporation.
 - e. Immediate placement of curing paper.
4. We don't want the use of hot water and advise that ice can be used to cool it but ignore the grout or cement and sand aggregate. The concrete industry recognizes that the most important ingredients to cool when placing concrete in hot weather is the aggregate. When sand gets hot it has the tendency to absorb and hold the heat. When making concrete, the aggregate can be cooled by wetting and evaporation, but we cannot always do this. It is best to cover the grout, cement and sand or store it inside in hot weather.
5. Again looking to the concrete industry, they wet their forms before placing concrete, especially in hot weather. The sides of our tile are our forms and they should be adequately wetted before placing the grout. If the tile is not absorptive it will not take a lot of wetting. If the tile is absorptive it will take more wetting. This wetting will prevent the rapid loss of water from the grout.
6. With proper planning and scheduling of work, the grouting can be done at the coolest part of the day. The work should also be scheduled so that the grouting does not have to be left unfinished and unprotected while other helping work is being done.
7. It is necessary on exterior work and also sometimes on interior work, to use shades or screens to prevent rapid water evaporation due to sun or wind. Again, using the concrete industry as an example, they say it must be done. It is more important that we do it, therefore, with our comparative small amounts of cement in the grout joints.
8. In curing concrete, alternate wetting and drying is forbidden because it is harmful to the quality of the finished work. Concrete is placed and then protected to hold in the moisture for proper curing. Grout must be finished, polished, wet with clean, cool water and then covered with 40 pound kraft paper. The kraft paper should be lapped to hold the moisture in. This covering must be left in place three full days. The wetting and covering should be done on finished grouting regardless of the temperature.