

TIPS ON HOT - WEATHER TILING

Tiles installed under conditions of high temperature, low humidity or wind, present unique challenges. Yet, an understanding of the effects that each of these environmental influences has on setting mortar, grouting materials and organic adhesives and observing recommended practices intended to minimize their effects can yield satisfactory installations under these adverse conditions.

Hot weather is defined as any combination of high air temperature, low relative humidity and wind velocity that effect the performance of setting and grouting materials. Undesirable hot weather effects on Portland cement mortars and grouts include increased mixing water or latex demand, increased loss of workability, the tendency to re-temper the mix during use, and an increased rate of skinning for mortars. Hot weather also increases the tendency for dry shrinkage cracking of mortars and grouts, poor physical strength of the cured materials, by the use of higher levels of water or latex during mixing, improper curing and ultimately decreases in the durability of the installation.

For organic adhesives, hot weather produces a creamier texture, increased workability and a tendency to trowel too large an area before applying tiles. Hot weather causes rapid skinning and loss of open time of organic adhesives due to the increased evaporation of water. Again, the durability of the installation is compromised by the potential for poor transfer of the adhesive to the tile back.

Epoxies are profoundly influenced by hot weather conditions. These conditions sometimes reduce the viscosities of epoxies making them more workable. Yet, hot weather always accelerates the rate of cure which can and has resulted in the loss of many a mixing paddle and marred finished tile work by an extremely difficult to remove epoxy film.

So why, when confronted with all of these negatives of hot weather tiling, would anyone consider proceeding with a ceramic tile installation under these adverse conditions? The answer is simple economic necessity.

The following recommendations are intended as a guideline to minimize or control the conditions caused by hot weather. Be aware that none of the following recommendations by itself may be sufficient to address problems at a particular installation. Rather, by necessity each installation will need to be evaluated on an individual basis and the appropriate recommendations employed.

Evaluate exterior installation sites in advance. Will the installation be exposed to direct sunlight all day or for a portion of the day? Will the site be subject to prevailing winds? Can shade be provided by a temporary shelter that can be moved as work progresses, or is it better to work at night?

Substrates exposed to direct sunlight will be hotter than those in shaded areas. This additional heat will cause a rapid loss of workability of cementitious grouts and mortars, increase a mortar's tendency to skin and cause a cementitious system to de-water prematurely and fail to achieve its design strength. Shading the installation can offer a solution as can adjusting the work schedule to the night or cooler portions of the day. Cooling the substrate with water before beginning the installation may be beneficial. But, care should be taken to remove all excess water before applying the mortar.

MATERIALS

Keep all materials in a shaded area do not store in closed trucks or vans. This includes tiles, mixing liquid, setting and grout materials. If any material is warm to the touch it is suspect. Don't use tiles that are hot to the touch. Cool all materials before proceeding.

Should you require any further information,
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