



Left: Commercial hotel kitchen quarry tile after nine months of exposure to trans fats (oleic acid), followed by exposure to enzymatic cleaning agents. The grout used was 100% solids epoxy.

Grout Not Necessarily a Problem

Surveys throughout the tile and stone industries have proved grout to be the biggest, if not one of the worst, problems with installations across the globe.

By Gerald Zakim

As the title indicates, this does not have to be the case. Grout has turned out to be “joint filler” with a very high profile. As such, with larger and larger tiles being set in mortars of various thin-to-medium-hi/build-latex-dry-latex-epoxy-silicone materials, and yes, even mud, with almost every color under the sun available as grout color, at minimum, the contractor and the industry have to pay more attention to choosing the appropriate grout, mixing it correctly, using the right tools, placing it right and cleaning it properly.

With a bevy of information available through various sources (exhibitions, workshops, articles, etc.), descriptions of materials and procedures are nothing new. Yet, grout problems with popping, cracking, powdering, hollow-sounding tiles over sound proofing, isolation crack-bridging materials, chemical destruction, color variation within the joint and the like continue on an daily basis.

These problems aren’t difficult to avoid. With proper training and forethought, the savings on callbacks, tear outs, experts, lawsuits and unhappy customers will result in more jobs with greater profits and yes, even more pride in your work.

The following are several state-of-the-art, standards-of-the-trade reasons why grout can discolor. Certainly, there may be other causes, however, from my experience, the common causes are:

- Too much water added in mixing the grout: This will cause a powdery grout that will scrape off with a fingernail and will also crack easily. It is more easily removed without damaging the tile than a grout that is solid. The now open joint should be properly cleaned and re-grouted.
- Improper cleaning of the grout: This can leave a haze on the surface of the tile. Buffing or polishing this with a floor waxer affixed with a pad may clean it off.
- Leaving plastic spacers in the joints: Depending on how the spacers were placed, they can sometimes be sanded down. It doesn’t make for a great installation, but it can serve.
- Having the thinset mortar/adhesive fill too much of the joint and show through: This is somewhat difficult to overcome. The simplest solution is to use a grout coating in the color desired.
- Improper mixing of the grout by using an improper (too much/too little) amount of water or additive: This is covered above. When the mix has too little water it will be crumbly, when it has too much water it will be powdery.
- Mixing partial bags since the grout colorant must be evenly distributed: The powder ingredients left in an opened bag become improper to use very quickly. The cement in the bag takes on moisture and should not be used. The colors and other ingredients in a partial bag will no longer be homogenous.
- Adding water after the first mixing (rehydrating): See Improper mixing.
- Improper joint packing (less than two-thirds the depth of the joint) doesn’t let the grout set properly.
- Get the air out of the grout; use tongue depressor smoothing.
- Inadequate cleaning of sponges, towels and water: Leaves dirty tile, often with a haze on the surface.
- Use clean water. Make sure to change it regularly.
- Not protecting the surface from dirty tools or shoes during the curing and hardening process will stain the grout.

- Enzymatic cleaning agents: In many cases, even epoxy materials can destroy grout, causing it to come out of the joint, allowing foreign materials to penetrate — causing failure. Pre-determination planning regarding prospective exposure to other chemical exposures should also be a prime concern.
- The temperature and ventilation in the installation area is crucial. If it's too hot, then there is less working time and surfaces will skin over. If it's cold, then cementitious grouts will not set properly.
- Consider using non-staining grouts and/or additives to make the grout non-staining. This can help prevent



Above: The stained grout in this installation was removed following water seepage from a nearby window.

grout callbacks and make them a thing of the past.

As you can see, there isn't any "rocket science" involved with using grout to set tiles or stone. Just think the job through, plan the installation, lay out the floor, store materials properly, check temperatures, mix the materials properly, set the grout and clean! **TILE**

About the Author



Gerald "Jerry" Zakim CSI Emeritus, NTCA Emeritus, NACE life member, ASTM, is a prominent consultant to the construction

industry with more than 50 years of experience. He is a patentee in his field and his specialties include tile, stone, setting materials, mortars, grouts, concrete, additives, chemicals, paints, coating, sealant and caulks, waterproofing, flooring, OSHA, ADA, mold, and more. He serves the Tile Council of North America (TCNA) as an expert/inspector in their Team USA program, as well as being a recommended expert by the NTCA. For more information, visit www.geraldzakimexperts.com, email srzakim@optonline.net, or call (973) 633-1130.