

HOW TO PREVENT GROUT RESIDUE AND TILE STAINING

A Glossary of Terms Used

Grout – mortar or resin-based product used to fill spaces between tiles

Grout Haze – residue attached to the surface of the tiles after the grouting process

Grout Retention – grout particles trapped in micro pores, textures or fissures in the tile surface

Grout Migration – tile discoloration from cement or resins absorbed into porous tile, primarily edges and unsealed natural stone

Grout Release – a liquid product applied to the tile surface that is not absorbed and acts as a temporary barrier to grout adhesion by filling surface spaces

Sealer – a liquid product applied to the tile that is absorbed into the tile or stone surface. Some sealers can be applied in a six-sided method to protect all the tile surfaces from staining. Unless topical and film-forming, sealers do not protect against grout retention.

Coating – a liquid sealer or wax applied to the tile surface before grouting that fills spaces in the surface and forms a barrier until chemically and mechanically removed

Additives – liquid added to rinse water to improve grout cleanup and reduce/eliminate the potential for grout haze/residues.

Technology is a Factor

Ceramic tile, natural stone and grouts have always been compatible materials but with the advances in grout formulation technology using polymers and resins, grout adhesion has increased dramatically! Though the grout products are water-cleanable, grout residues must be removed thoroughly from the tile surfaces before they set or cure. Adding to the potential for grout haze or grout retention, the most widely used grouts in today's installations are rapid-setting or rapid-curing to achieve extremely accurate color consistency and to accommodate fast track installation schedules. These fast-setting properties can create a challenge for some grout finishers, especially in warm, dry and windy conditions.

Technology for tile manufacturing has also advanced where now porcelain tiles can be profiled to achieve the strict requirements for slip resistance, to replicate wood plank and slate textures, or polished so smooth it's hard

to tell that they're not natural stones. Some of these advancements in tile design and manufacturing have inadvertently created new "spaces" for grout to fill.

All grout formulations combine a binder and an aggregate or powder to fill joints. The binder might be made of cement and polymer that attaches to sand, glass or limestone. Other binders include acrylic resins, urethanes and epoxies.

The grout haze from cement grouts is typically made up of a combination of the binder and fine particles of the filler. Resin based grouts - acrylics, urethanes and epoxies most often leave a clear film residue.

Tile discoloration from grout retention very often leads to complete tile replacement as the binder and/or fine aggregate particles become trapped in the tile surface, becoming permanently "grouted." More often, unglazed tiles are the most problematic but polished surfaced tiles that appear to be smooth can have fissures and "dove-tailed" pores from the grinding process. When the grout and tile are similar in color, the residue is unnoticed until traffic dirt and spills discolor or adhere to the grout, making remediation much more costly in an occupied project.

Grout migration is usually very evident after the grouting process as the discoloration darkens the entire tile or picture-frames the edges. As with grout retention, tiles are typically permanently damaged.

So, with all these advances, the possibility of a tile discoloration disaster is always present and only by taking precautions can you prevent it from happening. The primary causes for grout haze are listed below. Some instances are caused by inadequate installation practice, but others will occur on certain types of tile even when the grout is placed in a professional manner if protection is not in place.

Primary Causes of Grout Haze

- Spreading too much grout
- Leaving grout too long before finishing
- Improper cleaning technique
- Applying grout to tiles in hot, dry or windy conditions
- Textured/profiled tiles
- Tile with micropores
- Polished tile/stone with fissures
- Porous tiles



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Prevention:

Awareness of the possibility of these occurrences is the first line of defense against experiencing a problem! Here are some "red flags" to watch for on your next project:

- Unglazed porcelain tiles may have been designed with well-intentioned micropores to create high slip resistance, but these pores are traps for grout particles.
- Textured porcelain "wood-look" plank tiles may have absorptive areas from the manufacturing processes created by removing the dense outer layer of the tile. This leads to grout flash-setting long before a normal timeframe.
- Polished porcelain surfaces need to be ground to a depth that does not leave considerable voids. This is impossible to see with the naked eye so plan on using a grout release.
- Not all sealers are compatible for use with resin-based grouts. The grout may attach itself to the sealer and be very difficult to remove. Best to use products from the same manufacturer as they've been tested or confirm with the grout manufacturer.
- Most grout manufacturers recommend lightly dampening tiles with water to cool the surface when needed and/or lessen adhesion.
- The use of a grout release on the tile surface helps prevent grout from adhering to the tile and will prevent grout retention on most tiles.
- **MOCK-UPS:** With certain tiles or natural stones, using a penetrating sealer as the grout release is all that's required. In other cases, using a temporary film former (grout release) product is the solution and/or using a rinse water additive may be helpful. There will be times when both a sealer and grout release will be necessary. Apply a sufficient amount of grout to determine the correct process.
- Some non-slip tiles with micropores have surfaces that require a coating similar to a floor wax that is removed after the grout cures.

Consult individual product Technical Data Sheets for specific recommendations and limitations regarding project conditions. Contact CUSTOM Technical Services for questions and product information: [CONTACT CUSTOM](#) or (800) 282-8786.

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