Travertine Flooring Water Marks

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I am concerned. We just had a Travertine Floor installed and we sealed it ourselves with some sealer that you buy from Home Depot or Lowes. I have noticed that since we have some water drop marks that we have incurred from this being our kitchen area. How can I get rid of them, do I need to re-seal the floor again... we just did this about a month ago... Help please before we ruin our floor permanently.

Dear Dawn:
I really don't know where to start.
I will start with the sealer. Please follow me...

For starters, when referred to stone the word sealer is wrong. Well, technically it is not, but the reason why I said that's wrong is because sealers for stone are totally different from any other sealer that most people are familiar with. A sealer is perceived like a topical coating of sorts that's meant to protect the surface of the sealed object from traffic and spills, to produce a finish (polished, or matt, or satin) and to fill all little nicks, fissures and other surface imperfections.

A sealer for stone is none of that â€“ **None!**

And that is why I said that the word sealer is wrong when referred to stone. The right word is, **impregnator**.

An impregnator is a below-the-surface (of the stone) sort of sealer. It's a product made of two major components: a resin of sorts that could be silicone, siloxane, silane, ester epoxy, aliphatic fluorochemicals, acrylics, etc., plus a carrier, that could be a petroleum-based solvent or simply water. The resin is dissolved by and within the carrier.

What does an impregnator do, and how does it work?

The only thing that an impregnator does is reducing dramatically the natural absorbency rate of the stone by somehow filling the spaces between the single minerals composing the stone, which are known as **pores** - End of the list of performances. This reduction of absorbency rate (or porosity) of the stone will make so that possible staining agents that may get spilled on the stone will be kept at bay on the surface of the stone for a period of time much longer than if the stone was not sealed.

The way it works is that the solution goes inside the stone, the carrier (solvent or water) evaporates and the resin stays in and cures, thus partially clogging the pores of the stone.

The most important phase of the application of an impregnator is the total and thorough removal of its residue from the surface of the stone, so that at the end of the sealing job the surface of the stone is as bare as it were before he sealing procedure was started.

Now the question is: how does an impregnator go inside the stone?

Quite simply, by being absorbed by it.

So far we've learned a couple of important things: 1. That a sealer for stone only help preventing deeply imbedded stains by delivering a reaction time, which is how much time you'll have to blot the staining agent off of the stone surface before it begins ti sink in. (The better the quality of the impregnator in relation to the stone to be sealed, the longer the reaction time will be.) 2. That because of the way it was designed and works it cannot â€“ and in fact does not â€“ offer any protection whatsoever to the stone surface.

Next, we have now to talk about the natural absorbency of stone.

This side of mono-mineral rocks (i.e.: gemstones), every multi-mineral stone is somehow porous. However, while there are stones that absorbs liquids like sponges, there are stones that are naturally so dense that no liquid is thin enough to be absorbed by them. The latter types of stone â€“ which are quite a few â€“ can't be technically sealed, because no impregnator will ever stand a chance to being absorbed by the. On the other hand, since they won't absorb any liquid, it is pretty intuitive that they will never get stained.

What is interesting noticing is that while certain stones have an absorbency rate that indicates their ability to absorb liquids (above 0.2%), in fact they don't absorb anything due to their dramatically increased surface tension once polished. For example, travertine is rate at 0.4% to 1.0%. In its rough form it does absorb liquids, though slowly; but if you polish it, it effectively will not absorb a single drop of anything. In fact, nobody ever reported any stain on a polished piece of travertine.

In conclusion, only a certain number of stones can be sealed and, more importantly, the performance of an impregnator is only limited to the reduction of the stone natural absorbency rate if it is â€“ even when polished â€“ above the 0.2% cut off point.

How does the average consumer know if their stone could be possibly sealed without that kind of information? It is quite simple and down to earth: spill some water in a couple of spots of the stone to be tested, let it dwell for 10 minutes or so, wipe it dry and observe if the areas under which the water has been sitting have become (temporarily) any darker than the rest. If so, then if the stone is installed in an environment where staining spills are likely (i.e.: a kitchen) the application of a good-quality impregnator is recommended. If not, or if the stone is to be installed where the likelihood of spillage is minimal or nil altogether, it would be a totally useless exercise.

Next I will talk about travertine and marble. Once again, don't go away...

Having said that about the "sealer" and coming to your travertine, for starter it will not absorb a darn thing, since its amazing and unusual surface tension (especially when polished) makes it among the densest calcite-based stones. (Widespread popular misconception has it that travertine is very absorbent. It is not, and it's a scientific fact, not my opinion.) Therefore the application of an impregnator/sealer to it would only help its makers and its distributors to put their kids through college.

That was the good news. The bad news is the fact that travertine is a calcite-based stone, therefore it readily reacts to acidic spills by etching, which is not staining: it's rather surface damage, a mark of corrosion, which has nothing to do with the (very limited) absorbency rate of the stone itself, but exclusively with its natural chemical make-up. Soda, drinks, lemonade, orange juice, vinegar, salad dressing â€¦ you name it, will damage the stone surface by just becoming in contact with it in a matter of a few seconds. These damages will look like â€œwater spotsâ€• or â€œwater rings.â€•

As seen before, no sealer for stone under the sun will ever offer one iota of protection against those occurrences.

Bottom line: the wrong stone for the wrong application - End of story. :-(

However, what really makes it the wrong stone is not the stone itslef, but the finish you bought it in, which I assume is polished or medium-honed. If you had it low-honed (flat, with no reflection), or tumbled, or saw-cut, then while the etching would still occur it would be totally un-noticeable.

The best piece of advice that I can give you under the circumstances is to get hold of a reputable stone restoration contractor that will produce a low-honed finish with a good-quality 150 grit honing powder. After that, before dumping some more impregnator onto it, run the little absorbebcy test listed above.

All the above goes to show that there's a big need for marblecleaning.org of what it stands for!

May I ask you now to please read and e-sign our Statement of Purpose at:
http://www.marblecleaning.org/purpose.htm? :-)

Ciao and good luck,

Maurizio Bertoli

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