

The Stone Doctor

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Making an intelligent choice

Each year new types of stones are introduced to the market. The exportation of new stones from emerging markets such as China, India, Southeast Asia, is giving a greater choice of selection to architects and consumers. The use of stone is for ever more on the increase.

That doesn't mean that the level of understanding stone increases, it probably causes more uncertainty. Yet, it's hard to believe that there are few guidelines or references for those who select natural stone. Unfortunately, the decision to use a specific stone is usually based on the visual aesthetics of the sample presented to the architects, rather than on a review of the past use of the material and its history of success or failure. There is no single test or combination of tests that, when performed, can be used as a guide to determine the suitability of stone. There is no single point of reference to assist in the evaluation of stone, nor is there a reference that describes the process or issues to be considered in selecting and installing natural stone. Almost all of the problems that occur with stone are because the particular type of stone was not selected correctly for the use for which it was intended. Even stones with the best characteristics and performance have a potential of failure if the stone is not properly installed and maintained. If these measures are not carefully evaluated problems will occur resulting in some serious damages.

Selection of natural stone for wet environments (wall/floor)

I always maintain that in the world of stone, maintenance should begin at the time of the specification of the stone and go on through its installation and, eventually its care requirements. Specifying the wrong stone for the project at hand and/or installing it inappropriately will inevitably lead to situations hard to service if serviceable at all. Hence, beginning to think about maintenance after the cutting of the ribbon may be too late. It's hard to consider the possibility that anybody could debate that.

Such postulation has never been truer than in the case of a shower recess.

A shower recess is a very demanding environment from a maintenance point of view, and if everything was not done properly either when selecting the stone and/or when installing it according to precise and very narrow guidelines, there are going to be problems that will inevitably lead to installation failures.

Does it make any sense to specify certain types of commercial marbles (limestone), such as 'Perlino Rosato', 'Filetto Roso', 'Nero Marquina' are known to have a history of problems when installed in areas with repeated wet/dry cycle (showers). These types of stones may have the presence of potentially deleterious minerals, (swelling clays, sulphides, sulphates). These minerals may cause permanent expansion and physical disruption to the stone.



'Rosa Perlino'

Notice loss of veining along stylolites partings.

Oxidation caused from iron sulphide (pyrite) or iron carbonate (siderite) minerals can result in extensive yellowish/brownish oxidation (staining). Staining or discolouration are caused by the action of water percolating through cement screeds or toppings from which soluble alkali salts (sodium and potassium) found in Portland cement which allows alkaline waters derived from it to act as solvents. These alkaline solutions draw the organic matter to the surface where it may concentrate in the surface layers causing a deep brown discolouration. The only sure antidote is to prevent contact between these solutions and limestone. The porosity of cement screeds and topping layers should be reduced by cautious specification of polymer additives (water proof membranes) not sealers.



Should stone be sealed in wet environments? (wall/floor)

Could a situation like that ever be solved with the application of a stone sealer or some other "magic potion" in a bottle, hardly? It simply amazes me that people feel that by sealing any type of stone every problem will go away or never happen.

Understanding the relationship between sealer and stone is where the wheels fall off. A general solution is not possible because the physical and chemical characteristics of an unlimited variety of stone types must be considered. Not only are there so many different

stones but they can be finished in different ways and they can be put into an infinite number of different applications.

I have witnessed many examples of stone damage due to sealers (mostly indoor wet areas and exteriors where water is involved). The application of water-repellent substance to the surface of the stone might seem to be a saviour in a bottle that protects the stone from the effects of water and chemicals. This is far from the truth. Sealers can be detrimental to the performance of the stone as well as compromising the aesthetics. Salts, sulphates, calcium compounds and any other soluble chemical can be drawn up through the stone in response to the thermal engine. However, when the dissolved substances hit the sealer they can go no further. The 'breathability' often referred to in advertising is applicable only to vapour, not liquid. Gradually enough pressure can build up to cause the surface and edges of the stone to crumble, fret and spoil. Before that, in granite that is porous, the soluble substances can accumulate under the surface of the sealer but then be remobilized to appear elsewhere in a different form if the substrate becomes saturated.

There is strong evidence, that sealers should not be used as a general rule. Instead, they should be used to solve specific problems for which they are truly the best alternative.



Notice water beading on the surface of the stone, this shower recess was sealed soon after installation was completed. Within two months, there were evidence of serious problems.

Maintenance for Natural Stone (Shower Recess)

Shower recesses, whether ceramic or natural stone, represent a very delicate and demanding environment because of the heavy duty nature of their use. Hot water, steam, hard mineral deposits, soap and shampoo, generic bathroom cleaning products, are all factors that conspire against a sound well being for the stone. So then, do we have to give up natural stone in our shower recesses? By all means, no; but to solve the problem generated by specific ignorance we must become specifically educated. It may not sound like the best solution but it's the only one!

One of the major sources of income for the stone restoration companies are the repairs of damages made to the surface of the stone by regular household cleaning products. This reality reaches its peak in the case of the shower recess. In fact, the typical cleaning products used in a shower recess are either a soap scum remover, or a mildew stain remover, or both. Those sorts of cleaners are harsh by nature and do not agree with the makeup of marble and other calcite based stones. In one sentence, if you care about your

stone, stay away from regular bathroom cleaners and mildew stain remover. It is not a recommendation, it's must. You must use specialty products, a soap film remover and a mildew stain remover, made by a reputable company that are effective at removing soap and mineral deposits, and mildew stains, but are formulated in a way not to chemically interact with the stone in the process (see our 'Dos and Don'ts – under literature)



Beside the right cleaning agents, the golden rule for a sound maintenance of your natural stone shower recess, is to keep it as dry as possible, Using a squeegee at the end of a shower (better yet if followed by a quick rubbing with a terry clothe) will help a great deal, especially if you stone is polished to preserve the original finish produced by the factory. If you could implement such a procedure consistently, you will eliminate the hard work out of cleaning your bathrooms.