HOW DO ENHANCING SEALERS ENHANCE?

By Scott Worthington

In relatively recent times the market has seen the introduction of enhancing penetrating sealers. People had got used to invisible penetrating materials but also required sealers that highlighted the stone. Tumbled marble, bluestone (Basalt) and other honed or weathered materials looked better when they were wet. However, only coating sealers and usually oil or solvent carried versions created this look. These were of course unsatisfactory because they wore off very quickly, had poor vapour transmission, and were slippery when used outside. Penetrating versions of enhancing sealers were developed to cater for this growing requirement.

These have all been reasonably successful in that they do not affect slip resistance, provide good stain resistance, and breathe well. However, they do not have a long life and quite often fade out in a matter of months. There are of course exceptions and Aqua Mix Enrich N Seal is one such exception. It uses the Aqua Mix trade marked Polycure technology. This is a 100% moisture reactive poly-siloxane.

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I get asked more questions about the aptitude of enhancers than any other sealer. If they penetrate how do they make the stone look dark? In other words how do they actually enhance the stone? The answer to this question has little to do with the particular chemical, but instead with the physics of light. When a dry stone is exposed to light we see a colour. This is because the stone absorbs and reflects a specific part of the spectrum. Remember the full spectrum is white light. So colours appear because we see only a specific part of the spectrum. The wavelength that is reflected back to our eyes gives us the colour we see. Look at what appears to be a smooth surface through a microscope and what you will actually observe is a very coarse and rough topography. This scatters the light which reflects back to us as a lighter tone of the specific colour. In other words we see a dry (lighter) version of the colour. It is what happens when the stone is wet that provides an the answer to how enhancers work.

When the same rough particles are coated with a liquid (for example Enrich N Seal) they no longer reflect the scattered light to the same degree because the coating absorbs some of the otherwise reflected light. Hence, with a reduced amount of reflected light reaching our eyes we see a darker colour. The darker appearance is actually much closer to the true colour of the stone when viewed in unreflected light. This phenomenon also explains of why polished stone looks darker than unpolished. The polish simply reduces the amount of scattered reflected light, not withstanding the fact that the polished surface reflects the reduced scattered light in parallel, due to the smooth surface and is why it appears polished.

Enhancers such as Enrich N Seal not only absorb light (actually scattering it more effectively than the natural particles) but by doing so they help absorb it deeper in the stone. This means that the light is exposed to more of the stones particles that in turn scatter the light thus reducing the quantity of light that can be reflected back to the surface and ultimately one's eyes. In short the Enhancer takes the light deeper. The deeper it goes the more light is reflected and refracted within the stone, therefore less light is reflected back to the onlooker. Consequently one sees a darker stone. The bottom line is the more durable the coating and enhancing chemical the longer the light will be absorbed and the longer we will see the stone as enhanced.

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