Aqua Mix® Sealers Expected Wear

The "expected wear" or life of a sealer

By Scott Worthington

When Aqua Mix® Sealers Choice® Gold, one of the first, if not *the* first, premium sealer in the world proclaimed a life of up to 15 years, many in the industry wondered how this could be substantiated. As the years rolled on and the initial Sealers Choice installations continued to perform the doubters quickly became believers. However these successes bred another type of client and competitor, those that believed or claimed a sealer would last for a predetermined amount of time, … period! As this is an unrealistic expectation and claim, how is the life expectancy (expected wear) of a sealer calculated?

The first thing to understand is there are no internationally recognized test methods or standards for stone and tile sealers. There are some common test methods such as shear bond and vapour transmission, but no performance standards or standard tests a sealer *must* pass. This includes the performance characteristic of expected wear (EW). Because of this there is no independent way of evaluating one manufacturers claim regarding EW with another. However Aqua Mix® has always taken a responsible and scientific approach to all of our testing including claims regarding EW.

Aqua Mix® calculates expected wear by analysing a number of different factors:

1. **Raw material analysis.** All sealers utilize a core technology that in most cases co… from a raw material supplier. The suppliers do extensive testing on the raw mater…

their more pure form that includes accelerated laboratory testing to ascertain the life expectancy of the material. The testing also identifies the core characteristics of the materials such as resistance to UV, chemical resistance, abrasion resistance (where applicable) and moisture vapour transmission to name a few. All of these affect the sealers overall EW.

Hardened steel and quartz (granite) have the same hardness rating.

Calcite (marble) is rated at a 3 for hardness.

Sedimentary rock (slate) can be clay, shale or quartz based varying in hardness from 3 to 7. This image shows a slate equivalent to a softer marble.

2. **In house and independent sealer testing.** Once the raw materials are massaged into a specific formulation it is put through another raft of tests to see how the original characteristics are affected. Other tests are carried out over and above the originals such as stain testing and COF. The Aqua Mix® lab is set up for exposure testing (imperative to help calculate EW) to make sure that the formulation is still consistent with the original raw material performance.
3. **Stone and tile analysis.** One of the most important parts of the sealer performance jigsaw is the characteristic of the stone or tile. Some manufacturers maintain that some sealers have the same performance regardless of the type of stone or tile they are applied to. However our experience tells us otherwise. We know that a sealers overall performance is influenced by the physical characteristics of the material to be sealed and this includes a sealers EW. We analyse and document a number of stone characteristics such as hardness (Mohs), thermal expansion, soluble content and chemical composition. From these we can analyse how a specific type of compound used in a sealer will work on a specific stone and more specifically for how long. For example most of our premium sealers use active ingredients that will last in their pure form for much longer than our published sealer life of up to 15 years. However when applied to a tile or stone the hardness of the material greatly affects how long the sealer will last. Therefore the Mohs hardness of a stone or tile becomes a very important factor in determining the expected life of the applied sealer, as do the other physical characteristics of the stone or tile.
4. **Experience and Field References.** The last major part of the EW calculation is that of job site experience and field references. Evaluating actual jobs in pre-launch testing to see how they perform versus laboratory models is part of the process. However perhaps the most convincing data is from jobs that are well advanced in terms of their life and in the case of Aqua Mix, jobs that already exceed the EW claims made by the company. Examples of such products are Aqua Mix® Penetrating Sealer, Aqua Mix® Sealers Choice® Gold – Rapid Cure, Aqua Mix® Grout Sealer and Aqua Mix® Grout Color… This not only justifies the EW claims but also helps us identify the best raw materials f… in future sealers.

In summary due to the absence of any international test methods or performance standards for stone and tile sealers Aqua Mix® uses a complex system of data analysis to calculate the expected wear of a sealer. Our realistic approach is reflected in two major ways:

1. **The words "Up To".** In all our claims of EW we use the term "up to" ...15 years for example. This means that in certain circumstances the sealer will last 15 years and in others it will last a shorter period of time. The significance of this is we recognize that the overall performance and life of a sealer is affected by many other variables such as maintenance, type of stone or tile, type of environment and its use and climate. Simply stating that a sealer will last a predetermined amount of time regardless of these many variables is not accurate or responsible.

2. **Commercial Warranty Program.** This program is different to most other warranties in the industry. When a sealer is used on a job it is impossible to give a simple "standard" warranty that covers every stone, tile, environment and use. The Aqua Mix® commercial warranty works by gathering a variety of data (type of stone or tile, area of use, type and amount of traffic, climate etc), adding the extra ingredient of job history, and then calculating the expected wear and hence warranty for the specific application. This process recognises the simple fact that the EW or life of a sealer is inextricably linked with other job site-specific variables and factors as well as the physical characteristics of the tile or stone being sealed.

In conclusion the expected life of a sealer is not something that can be predetermined for all materials on all types of applications. It is, like the other performance characteristics, something that must be calculated from a variety of data and sources, where possible, based on science. This calculation is the most realistic and responsible way to report sealer performance including expected wear.

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