ROCKY MOUNTAIN PENETRX

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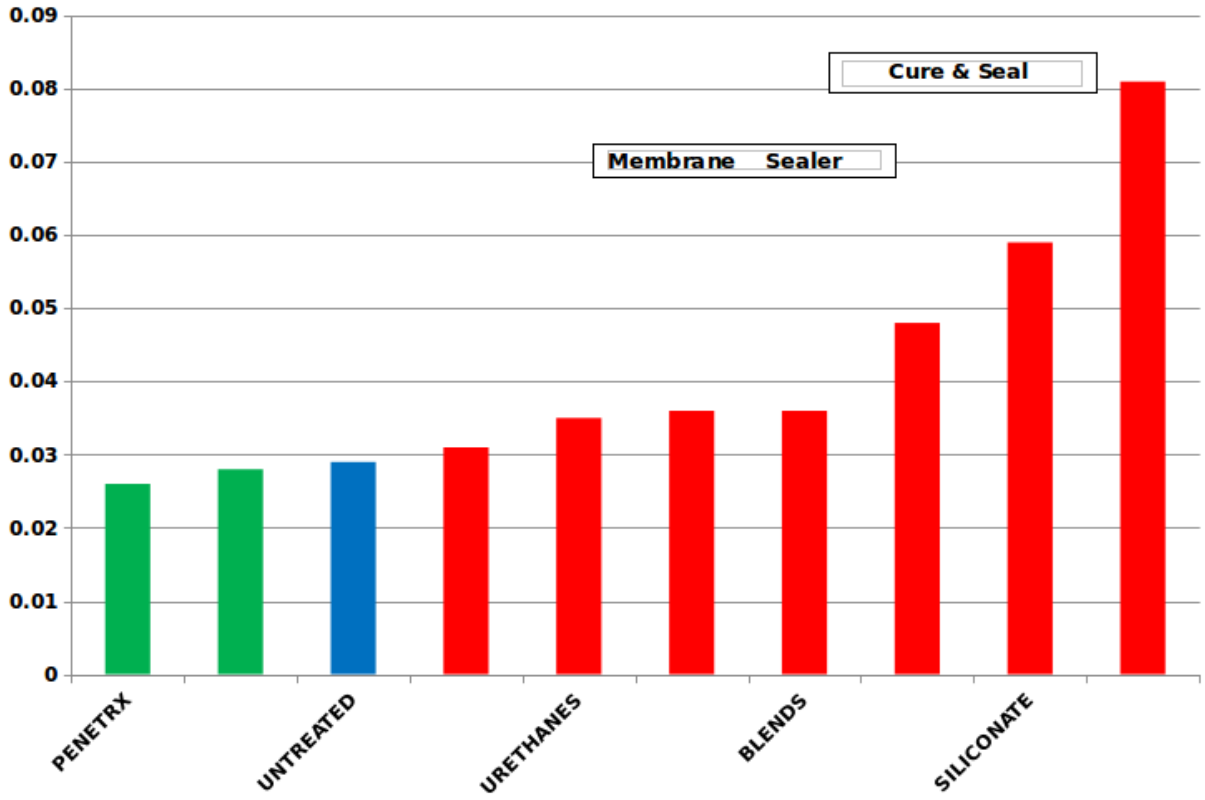
TESTED PRODUCT, PROVEN RESULTS

According to the comprehensive ASTM C 666 procedure, the researcher examined the freeze-thaw resistance of various concrete mortar specimens which had been treated with 57 different types of sealers. Included were active components of Penetrx "Liquid Sand", SiO3 in aqueous polymeric solutions.

Special care was taken to simulate both old and new concrete, high and low cement to water ratios, and a variety of curing practices. Salt contamination was simulated by immersing the samples in a 15% NaCl solution prior to sealing treatments. Thus B different types of concrete mortar specimens in 912 total conditions were tested. The resulting porosity, permeability, chloride penetration and overall durability bore directly on the outcome. During these tests, the ultimate average expansion of the samples after 500 rigorous freeze-thaw cycles was examined. This is the equivalent of many years of seasonal weathering in the geographical center of the United States.

Remarkably, out of the 57 sealing processes tested only the Penetrx component SiO3 and relatively expensive epoxies reduced the average expansion as compared to the untreated mortar specimens. The SiO3 samples showed the highest stability, producing the lowest average expansion rate of all sealers tested. Whereas the high cost of epoxies, their altering of the surface appearance, their susceptibility to becoming hazardous when slippery, and their tendency to crack and peel has been noted, this leaves a properly engineered SiO3 process standing alone as both effective and innocuous.



"...the detrimental effect of the (ineffective) sealers on the freezing and thawing resistance of mortar must not be overlooked. By applying in the field a sealer onto a concrete with less than excellent freezing and thawing resistance, distress is potentially created...(and)...mechanical damage ensues."

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Penetrx TM Benefits

- Penetrates surface, acting microscopically : Seals with Liquid Sand TM tough as quartz
- Strengthens structure & increases density : Stops damage from freeze/thaw cycles
- Resists pop-outs, marbling, simple cracking : Stops scaling, erosion and efflorescence
- Resists penetration of water & de-icers : Resists oil stains, chemicals & pollutants
- Dries quickly, usually 30 minutes : Won't harm plants, animals, environment
- Affordable-pays for itself in about 6 months : 7 year warranty provides full protection

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During the formation of concrete, cement particles dissolve to form calcium silicate hydrate. After bonding with sand and aggregate, this substance provides the rigidity and compressive strength associated with concrete. However, cement hydration also produces an undesirable by product "calcium hydroxide" which adversely effects durability. Why? Because it is attacked by normal weathering effects, chlorides, de-icers, acids and other pollutants. And it proves to be water soluble over time, increasing porosity and permeability and thus weakening the cementitious structure. Therefore, it is not only ideal to reduce the proportion of calcium hydroxide but also to convert it to durable calcium silicate hydrate. When this is done, what results?

Greatly increased strength and useful service life of the concrete.

The Penetrx ACS-100 family of sealers brings about this essential conversion through the use of proprietary "Liquid Quartz" Concrete pores and capillaries are sealed to resist penetration of contaminates and reduce the damage from freeze/thaw cycles.

"STOP MOTHER NATURE IN HER TRACKS"