SealGuard Inc.
WORLD CLASS WATER SEALING SOLUTIONS

Polyurethane Grouts vs. Other Chemical Grouts

Cements

A wide variety with varying strengths, slumps and flow ability. Often in field use there are a variety of additives designed to "help" with various properties, such as, sedium Silicates and assorted Hydrophillios such as Bentonite (Clay) and Ground Walnut husks.

Limitation: Bulky application equipment, prolonged set times, limits in fracture size, poor performance in water, brittle, shrinkage, poor adhesion. Environmental problems around water sources, pressure injection ceases when pumping stops.

Hot Bitumen

An ancient method now rarely used, environmental concerns, application hazards with heat. No real control on set times.
Limitations: Unknown set times, poor mechanical strengths, poor adhesion.

Silicates (Sodium/Urea) "Water glass"

A variety of compounds, using silica sands in a dissolved form. When reacted it forms a silica gel, which is hard and very brittle.
Limitations: Highly Alkaline, (PH 13) extremely hard and brittle.

Acrylics

Supplied in a variety of formulations. Somewhat Hydrophilic but all generally form a gel. Reactions can vary from instantaneous to around 30 minutes.
Limitations: Poor adhesion, limited mechanical strength. Hydrophilic promotes shrinkage.

Acrylamides

Introduced in the 1950's these materials have been effective in many cases but have experienced health and safety challenges relating to various formulations. (Sweden Hallandsasen Site - 1998).
Limitations: Poor adhesion, limited mechanical strength, some formulations present H&S issues. Complex chemistry when used as a grouting medium.

Acrylates

Similar in appearance and end product to Acrylamides, their main claim to fame being that they are less toxic than Acrylamide.

Siloxanes

A water soluable compound generally of use in surface sealing of concrete, but can be of use for pre-injection of crack systems to prepare them prior to crack injection with "HyperFlex".

Epoxies

Although commonly used for a variety of repairs, epoxies have become less popular for water sealing.
Limitations: Insufficient flexibility for use in crack systems due to non-expansive nature, not ideal for void application. Many formulations are too viscous to pump. Expensive.

The expansiveness of HyperFlex, coupled with its adhesion and flexibility, make it an ideal medium for filling voids, in this case a 48” pipe at an inactive steel mill.

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