

PermeNewal™ Permeation Impregnation Process

A method for restoring the structural and surface integrity and repairing large areas of map cracking or porosity. Results of core testing revealed increase from 1200psi to 6800psi after treatment.

TECVAC'S™ PROPRIETARY IMPREGNATION PERMEATION PROCESS RESTORES CONCRETE, MASONRY AND STONE EFFECTIVELY AND PERMANENTLY.

Often, closely meshed fractures (map cracking) are considered impossible or impractical to repair. The maze of cracking is not suitable for individual crack repair application and the usual alternative is to remove the entire structure or area and replace it entirely. This tell tale pattern is sometimes evidence of Alkali Silica Reaction.



ASR is uniquely characterized by production of a gel-like reaction product. It is composed of essentially of silica, the alkalis (sodium and potassium), and calcium in the presence of water. Uptake of water by the gel is the primary factor determining volume changes associated with ASR. The gel may be present in large or minute amounts in aggregates, aggregate sockets, air voids, fractures, and on the surfaces of externally formed concretes. [\(about ASR testing\) \(Over 4million sqft treated with Metered Saturation Soak™\)](#)

PermeNewal™ Restores Concrete, Masonry and Stone Effectively and Permanently

Highlights From the APTA Rapid Transit Conference Report

*Rehabilitation and retrofit of aged and distressed rail-transit structures and facilities often calls for unique and innovative engineering solutions, if the requirements of the operating-system safety and reliability, and the construction economy, are to be optimally realized...The concrete deterioration was caused by alkali-aggregate reaction and by the deicing salts, in conjunction with the freeze-thaw damage. The novel vacuum -impregnation method was used to successfully restore integrity of the affected concrete and thus obviate the need for platform demolition and reconstruction...The slab is cast in place using 3500psi concrete...In some instances the Minnesota Avenue structural slab had deteriorated to such an extent that the core recovery with sufficiently long pieces for compressive testing was not possible...In a generalized sense, only two basic options were available: Remove the defective concrete and repour, or utilize a procedure capable of in situ restoration of concrete...This method is based on first creating a partial vacuum in the concrete, a suitable polymer resin is then introduced into the concrete-matrix. **The resin fills the cracks, including micro cracks down to 0.001 inch and less...** Control cores were taken before and 8-hours after the completion of the impregnation operation. The cores were tested to yield a compressive strength ranging from 6,400 to 7,200 psi...the method was completely successful... susceptibility of rebar to corrosion was also significantly diminished...The rehabilitated slabs are reported to be performing well. ([Request a complementary copy of the full report.](#))*

By application of the PermeNewal™ Process to the affected surfaces, vast areas can be structurally renewed, economically sealed and protected permanently. Before you even think about tearout and replacement consider PermeNewal™.



