

Summary

Subject: ACI 2123R_10

The world's foremost authority on concrete, the ACI (American Concrete Institute) has recognized the benefits of crystalline admixtures and highly recommends them for use as a PRAH (Permeability reducing admixtures for concrete under permanent high hydrostatic pressure) in their latest report on Chemical admixtures for Concrete, released in November 2010. (Please find the report attached).

The ACI now strongly endorses the use of crystalline admixtures to protect structures under hydrostatic pressure, as well as improve the durability of concrete in aggressive environments.

In the previous version of this document released in 2004, very little consideration was given to crystalline materials at all.

Here are some highlights of the report;

- Please see fig 15.5 and table 15.1 on page 49 clearly **establishing crystalline admixtures as the best permeability reducing admixtures.**
- Firmly **establishes crystalline admixtures as superior to hydrophobic pore blockers and colloidal silica.**
- The use of the term '**Permeability Reducing Admixtures**', instead of 'waterproofing admixtures' primarily describes the benefits more accurately as **DURABILITY of concrete.** (by reducing permeability of concrete, one can eliminate the 4 main reasons for concrete deterioration, i.e. chemical attack, freeze-thaw damage, alkali-silica reaction and corrosion of steel, thereby making the concrete more durable.
- Please read Chapter 15 starting on document page 46. A lot of good things are mentioned about Crystalline waterproofing, including its ability to **self-heal concrete and resistance to high hydrostatic pressure. It recommends crystalline admixtures for critical structures** such as water-containment structures, below-grade structures, tunnels and subways, bridges and dams, and recreational facilities such as aquatic centres.

In short, what this means is that Penetron Admix is a mainstream, well established technology that is recommended by the ACI as the best way to reduce permeability in concrete under permanent high hydrostatic pressure.

As the only 3rd generation crystalline admixture on the market, Penetron Admix is arguably the best crystalline admixture available, as it can be dosed at 0.8% with no negative side effects on strength and setting time).