

## **Facts about Curing Concrete Warehouse Floors** (Sometimes using the best product is also the most affordable)

Maintaining the proper moisture vapor transmission rate (2% mvtr) immediately after placement and throughout the ensuing 28 days is critical to establishing structurally sound concrete. This process is known as curing.

For centuries concrete has been cured by bathing green concrete with water, moist straw or burlap blankets. Actually, **Water Curing** consistently for 14-28 days remains an excellent method of curing concrete, but labor conditions have rendered this method impractical except for extremely unique projects.

During the chemical age of the 1950's, in an attempt to reduce labor costs and increase consistency, curing with **Thin Film Curing Compounds** came into practice. This time also marked advent of retarders and accelerators – some of which do not have a positive affect on concrete quality. Thin film curing films, typically acrylic resins or wax, are designed to remain on top of the concrete during the 28 day curing process. Even distribution and thickness of the layer is critical to obtain the desired mvtr - as such proper application is critical. When functioning properly these films dissipate at the conclusion of the curing process. However, variance in temperature, weather conditions and exposure to UV light make the timing of this process highly unpredictable. If dissipation is incomplete uneven appearance will occur. In almost all cases grinding, stripping or shot blasting is required to commence with permanent sealing or coating, which adds additional labor cost and time cost.

During the 1980's the US government and military began the use of **Chemically Reactive Penetrating Curing Agents** to highly valued projects such as airport runways, bridges, tunnels and high priority applications. Application is simple and typically done with a low pressure garden-style sprayer. Because the chemical reaction is predictable, the highest standards of consistency are achieved, and within 3-5 hours variables such as temperature, weather and UV exposure become negligible. Additionally, the chemical reaction is permanent, which permanently increases the strength as measured in pounds per square inch (PSI), hydrophobic resistance, and oliophobic resistance of concrete. Further, within 14 days penetrating chemically reactive cures can allow additional treatments – densifier/hardeners, stains, epoxies and urethanes - to be applied without the added labor cost and time cost for removal of residual film.

**Chemically Reactive Penetrating Curing Agents**, once considered prohibitively expensive, are gaining rapidly in popularity as they can provide cost effective, reliable curing results with the added benefits of permanently improved concrete strength, moisture resistance and dust resistance.

# Math about Curing Methods

## Thin Film Resins (acrylics, acrylic blends)

- 1) Yields no lasting chemical bond with substrate.
- 2) Inconsistent application results in splotchy residue.
- 3) Long term protection requires additional sealer application.
- 4) Permanent sealer application requires removal of film residue.

## V-SEAL 101 (Chemically Reactive Penetrating Cure & Seal)

- 1) Provides correct 2% Moisture Vapor Transmission Rate (mvtr)
- 2) Molecular chemistry bonds with Portland cement permanently increasing strength, dust resistance and moisture resistance.
- 3) Easy application yields predictable curing results with less temperature or weather sensitivity.
- 4) Leaves no film residue to obstruct future densifier/hardeners or epoxy.
- 5) When applied over machine trowel concrete typical yield is 400-600 square feet per gallon providing per square foot costs of approximately 5 cents per square foot.

**If the consumer knows his options; 82% choose superior cures and sealers if given the choice (Based on a U.S. public survey in 2008 from homeowners and commercial concrete applications after the completion of their project. Cc lvd. 2009 Jan.10<sup>th</sup>) – especially when using the best is also the most affordable.**

	Cost per sq/ft
Cost of low/medium grade acrylic resin cures .....	.05
Cost to prepare for Densifier/Hardener or Epoxy.....	.25
Total material cost and preparation cost prior to finish floor treatment.....	.30
V-SEAL 101 (Chemically reactive penetrating cure).....	.05
Cost to prepare for Densifier/Hardener or Epoxy.....	0
Total Cost.....	.05

**V-Seal COST SAVINGS** (based upon 25,000 square feet)..... **\$6250**

**For additional information visit [www.vseal.com](http://www.vseal.com) or call V-Seal for details at 877 738-7325.**