

CONCRETE VAPOR SHIELD



Tech Data Sheet

PRODUCT DESCRIPTION

Vapor Shield is a chemical hardener, densifier, and soluble chloride reducer used over bare concrete prior to cementitious overlay applications. Vapor Shield blocks and reduces vapor emissions through the concrete but leaves concrete breathable, blocks hydrostatic pressure up to 20 psi., does not alter color of concrete, nor does it make the surface slippery or less slippery. Vapor Shield helps to reduce dust on floors, reduces the green window from 28 days to an average of 5 days

PRIMARY USE

Vapor Shield is a clear permanent application that preserves and seals new and existing pneumatic poured or poured-in-place concrete, seals the complete matrix, and helps preserve its embedded steel.

Vapor Shield is a pro-reactive catalytic agent that reacts with free alkali and /or alkali hydrates by filling pore spaces and aggregate 'void areas' with an 'internally produced' silica hydrogel. Alkali is converted to a neutral compound, thereby reducing potential internal chemical reactions. Concrete becomes a denser, stronger bond and is a permanent hydrostatic seal from within.

Vapor Shield enhances the bonding quality of concrete shells to be painted or plaster-coated, prevents peeling, cracking, and loss of bondability due to capillary moisture or internal chemical reactions.

Vapor Shield will not alter surface appearance or physical features, protects pool shell from damage, such as spalling from freezing/thaw cycles, neutralizes existing acids and chloride corrosives and reduces rusting/deterioration of embedded steel. Vapor Shield eliminates efflorescence and prevents chemically treated pool water from passing through the pool shell and leaching into the ground water supply.

COMPOSITION

Vapor Shield is a sensitive water-based reactive catalyst in a proprietary colloidal silicate formulation that produces a silica hydrogel below the surface within the concrete substance.

BENEFITS

- Accelerated "green window" by about 500%
- Moisture vapor penetration blocker
- Strengthens and hardens concrete
- Protects reinforced steel
- Freeze-thaw protection
- Deep below surface penetration (3-5 inches)
- Reduces efflorescence bleed-through stains
- No leaching pool chemical into ground water
- Water based – environmentally safe
- No VOC / VOS content
- Helps maintain pool water chemical balance

APPLICABLE Vapor Shield STANDARDS

ASTM C-672 Section 7 Water Absorption
ASMT C-672 Section 9 Suction
ASTM C-672 Section 10 Efflorescence
ASTM C-666 Freeze-Thaw Resistance
ASTM C-666 Salt Attack Resistance
DIN 1048 ASTM C-192 Strengthens Concrete
AASHTO T260 Chlorine Ion Content
AASHTO T259-78 Chloride Ion Penetration
VOC / VOS Compliant

PHYSICAL PROPERTIES

PHYSICAL	LIQUID
COLOR	CLEAR
ODOR	NONE
SPECIFIC GRAVITY	1.11 +/-
FLASH POINT	NONE
pH	12 +/-
TOXICITY	NONE
BOILING POINT	212F / 100C
FREEZE TEMPERATURE	32F / 0C
HAZARDOUS VAPORS	NONE
WEIGHT PER GALLON	9.18 LBS / 4.16KG
ENVIRONMENTAL	NEUTRAL
USER-FRIENDLY	YES
SHELF LIFE	INDEFINITE
SURFACE BONDING	EXCELLENT
FLAMMABLE	NO
VOC / VOS CONTENT	NONE
RESISTANCE TO UV	EXCELLENT
PAINTABLE	YES
POLLUTANTS	NONE
WASTE DISPOSAL METHOD	NON-HAZARDOUS
RESISTANCE TO ABRASION	EXCELLENT
POLYMERIZATION	NIL
SOLIDS BEFORE APPLIED	NIL
R-FACTOR	100%
FREEZE HARM	NONE ALLOW TO THAW
COVERAGE	200 SF PER GALLON

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INSTALLATION – JOB CONDITIONS

- **Penetration:** Must have direct access to substrate. Any previous coatings must be removed - Abrasion of surface could be required to allow penetration. To test the surface for Vapor Shield penetration place a spot of water approximately the size of a 50 cent piece on the surface, if the water absorbs into the surface entirely within 15 minutes, no abrading is required. If the water sits on the surface or the surface beads water, the surface must be mechanically or chemically abraded.
- **High Temperatures:** When ambient temperature is at or above 95F, cool down the surface by saturating with cold water and allow surface to remain damp. Remove any puddled water.
- **Wind:** Take caution in windy conditions as not to allow product to make contact with unintended surfaces.
- **Drying:** Drying: Dried Vapor Shield can etch glass or dull bright aluminum. When contact is made, immediately rinse with water before the product dries.
- **Product Strength:** DO NOT DILUTE. Use as supplied and directed.
- **Plaster Coatings:** After Vapor Shield has been applied, (not a new shell) wait 24 hours or until the surface is completely dry before applying a breathable plaster coat. (Note: For new concrete, it is recommended to wet cure according to ACI 506.2- 95, section 3.8)
- **Fractured Concrete:** Vapor Shield seals only the concrete, not any fractures.

APPLICATION: ON SLABS, WALLS, POOLS, PONDS & FOUNTAINS

Thoroughly clean surface of any oils, grease, cleaning agents, curing agents, coatings, sealers, any contaminants that has purged to the surface, and any product that could prevent Vapor Shield from penetrating.

1. Vapor Shield is to be applied with a low pressure sprayer.
2. Excess un-reacted Vapor Shield can leave white crystals on the concrete, simply brush or broom off on to more porous areas.
3. Spray with about a 50% overlap of each stroking motion. For horizontal surfaces: stroke in fanning motion from 'left to right' with the first application, and then the second application with an 'up an down' fanning pattern. For vertical surfaces: apply from top to bottom using a 'left to right' fanning pattern with the first application and then repeat the same for the second coat. Hold sprayer 8" -12" from concrete surface.
4. The entire surface area should be well saturated, but not allowed to puddle.

COVERAGE

200 sf per gallon

PRECAUTIONS

Vapor Shield does not perform when:

- other sealants are on the concrete surface
- polymers are in the mix
- rebound in pneumatically applied concrete
- cover all glass to prevent etching
- cover all items not intended for product use
- immediately flush accidental over-spray with water
- can discolor aluminum
- do not use when air or surface temperature is below 40F/4.5C
- do not use if temperature will drop below 40F/4.5C within 6hrs.

PERFORMANCE

VOC's - Rule 1168 of CA. SCAQMD:

- 0g per L

Moisture Vapor Redustion:

- >96% per ASTM E96-05 (10 milsDFT)

Pull-off Adhesion / Bond Strength:

- 1,000 psi (6.9 MPa) with failure in concrete substrate (at 28 days per ASTM D7234

Resistance to High Alkalinity:

pH 14 plus or minus

- 14 day spot test, covered - no effect
- 14 day spot test, uncovered - no effect
- 14 day immersion - no effect

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