

## 100% Solids, Water - Vapor Barrier Coating

- ✓ One coat system - No broadcast
- ✓ Reduces moisture vapor emission rates of up to 25 lbs to 3 lbs or less
- ✓ Flooring system installed next day
- ✓ Covers even 5 day old concrete
- ✓ Can be applied to damp concrete
- ✓ High alkalinity barrier (pH 13 - 14)
- ✓ Contributes to LEED (EQ 4.2)

### Product Description

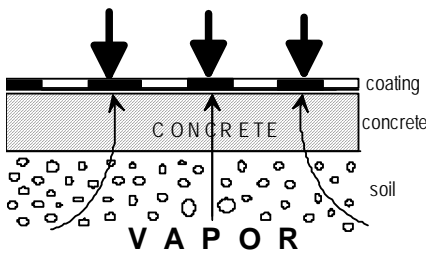
AQUAFIN® VAPORTIGHT COAT®-SG3 (in short "SG3") is a unique 2-component, moisture tolerant, low viscosity, solvent free, chemically enhanced epoxy based product which reduces the passage of water vapor and moisture through slabs on or below grade, thus eliminating delamination of adhesives, floor coverings and coatings. Use "SG3/FC" (5 hr Fast Cure) where time is of the essence.

"SG3" reduces water vapor transmission levels of up to 25 lbs/24 hrs\*1000 ft<sup>2</sup> to 3 lbs or less for the installation of most floor covering systems including VCT, sheet vinyl, carpets, wood, laminates, epoxy, terrazzo & synthetic.

Note: Use VAPORTIGHT COAT-SG2 (in short "SG2") in case of capillary infiltration of oil or other chemicals from the ground or to treat oil-contaminated slabs.

### Typical Applications

#### VAPORTIGHT COAT-SG3



#### Water-Vapor Transmission:

Concrete slabs, cementitious underlayment (other than gypsum) and ceramic tiles with missing or damaged under-slab vapor barriers.

#### Fresh concrete slabs:

- 5 day old concrete slabs. (Keep in mind that shrinkage cracks in the concrete may occur.)

#### Areas of application: slabs

- Industrial/retail facilities
- Office buildings
- Hospitals and schools
- Food processing plants.

#### Call Aquafin for:

- Slabs with floor heating
- Residential slabs below grade & garages.

### Features & Benefits

- Solvent free
- Vapor & water barrier
- Compatible with most flooring systems
- Low viscosity
- Minimal downtime
- Does not support mold growth

- Indoors: low odor and non-flammable.

### Testing for Contaminants

Request owner of facility to test slabs with unknown history for contaminants (i.e. hydrocarbons, other organic compounds, un-reacted silicates, ASR, Sulfurous compounds, etc.) to determine suitability for "SG3". If slabs test positive "SG2" may be recommended in lieu of "SG3", or neither one may be appropriate. Provide Ion Chromatography and IR Spectroscopy data before commencing application.

### Water-Vapor Emission Testing

AQUAFIN strongly recommends "Anhydrous Calcium Chloride" testing as per ASTM F 1869-98 on slabs to be treated, to determine the MVER (moisture vapor emission rate) in lb/24 hrs\*1000 ft<sup>2</sup> (grams/hr\*m<sup>2</sup>). Alternately determine RH content (%) as per ASTM F 2170. The testing must be carried out before application of "SG3" to obtain AQUAFIN warranty.

Note: MVER fluctuates within slab areas, and can have significant seasonal variations (i.e. in Nov./Dec. 6 lbs and in July/Aug. 16 lbs or more).

### Preparation of Substrate

All concrete surfaces with minimum 2,500 psi (17 MPa) compressive strength, to be treated with "SG3", must be clean, sound and have an "open"/absorptive surface ("tooth and suction").

⇒ Do not apply "SG3" to surfaces which have been previously treated with any kind of sealer prior to contacting Aquafin.

1. Remove existing floor coverings, coatings, adhesives, curing compounds, efflorescence, dust, grease, laitance, etc. down to bare concrete with steel shot blasting, scarifying or grinding using a diamond cup blade (run with low RPM and assure that surface is profiled). Standard acid etching is NOT allowed.
2. Steel shot blast or abrasive blast concrete slabs to surface profile ICRI CSP 3 - 5 (ICRI, Des Plaines, IL, Guideline No. 03732.).
3. Burn off reinforcing fibers and vacuum remains.
4. Remove glaze from "quarry tiles".
5. Repair cracks with a suitable patching mortar.
6. Install cementitious underlayment, leveling mortars, flash patching, etc. using a primer for non-porous substrates on TOP of "SG3".
7. Treat saw cut and expansion joints as per application Guideline 5.1.1-1.
8. Carefully pre-dampen all the prepared surfaces (excluding quarry tiles) to be treated several times with clean water to SSD (saturated surface dry). Leave no standing

water!

### Mixing

- ⇒ Use chemical resistant gloves and goggles when mixing or applying "SG3".
- ⇒ Material should be minimum 60°F (15°C) at time of mixing.
- ⇒ Do not alter mixing ratios. Do not thin.

Part A (A-Component) = resin

Part B (B-Component) = hardener

are supplied in the appropriate mixing ratio.

1. Assure that Part B completely drains into Part A. Always mix a complete kit in the proportions supplied.
2. Stir mixture for approximately 3 minutes to a homogenous, streak free consistency, using a slow speed drill (approx. 300 rpm) with a PS Jiffy blade. Avoid any action that may entrap air. Ensure that the material at the pail bottom and sides are agitated.
3. Pour mixed material from the mixing container into a clean container and carefully mix it once more (approx. 30 seconds).

### Application

- ⇒ Do not apply at air or slab temperature below 50°F (10°C), or above 95°F (35°C).
- ⇒ Do not apply to unprotected surfaces or surfaces where water has accumulated (puddles).

"SG3" can be applied to concrete that is at least 5 days old.

1. **After steel shot blasting or scarifying, check slab surface with the water drop method.** Pour a drop of water about the size of a dime in several places. If it beads, surface is not absorptive and requires more preparation. If it penetrates the concrete within approx. 30 seconds the surface is absorptive and ready to receive the "SG3" treatment. However, this method does not replace pre-testing of concrete cores. A test application is highly recommended on old slabs where a sealer may be present, or slabs where an epoxy coating has been removed, followed with an adhesion test (i.e. Elcometer, etc.).
2. Protect the area to be treated from strong sun light, wind and rain. Indoors, prevent noticeable drafts.
3. Insure that the material is applied within the coverage rate specifications by marking the area to be covered.
4. **Install "SG3" as per the chart "Application Rates":**
  - **Step 1:** pour "SG3" in sufficient quantity over the pre-dampened area (excluding quarry tiles) to be treated and uniformly distribute with a

### Sample Water Vapor Transmission Reduction

Test : ASTM E 96-95

Test carried out by independent laboratory	Test Results		
	BEFORE: Untreated Control Wet Method	AFTER: VAPORTIGHT COAT®-SG3 Wet Method	REDUCTION %
<b>Water Vapor Transmission:</b> ♦ lbs / 24 hours * 1000 ft <sup>2</sup> ♦ grams / hour * m <sup>2</sup>	<b>24.08</b> 4.89	Average of 6 samples <b>0.61</b> 0.12	<b>97</b>
Permeance: ♦ perms ♦ grams / Pa*s*m <sup>2</sup>	16.95 9.69 x 10 <sup>-07</sup>	0.43 2.64 x 10 <sup>-08</sup>	97

## "SG3" Application Rates as per ASTM F-1869 (CaCl)

Moisture vapor emission rate lb/24 h • 1000 ft <sup>2</sup>	g/h/m <sup>2</sup>	No. of coats	Application rate		Appx. thickness		~Yield: 2.4 gal (9.2 L)		~Yield: 7.3 gal (27.5 L)	
			ft <sup>2</sup> /gal	kg/m <sup>2</sup>	mils	mm	ft <sup>2</sup>	m <sup>2</sup>	ft <sup>2</sup>	m <sup>2</sup>
up to 10	up to 2.0	1	155	0.29	10	0.25	370	33.4	1,130	105
10 - 15	2.0 - 3.0	1	130	0.35	12	0.30	310	28.8	950	88
15 - 20	3.0 - 4.0	1	105	0.43	15	0.38	250	23.2	760	70
20 - 25	3.1 - 5.0	1	80	0.57	20	0.50	190	17.6	580	53
Stand-alone coating on slabs		1	80	0.57	20	0.50	190	17.6	580	53
New concrete (min. 5 days old)		1	80	0.57	20	0.50	190	17.6	580	53

Note: All values theoretical. Application thicknesses are approximate. Some variations may apply due to porosity and absorption of substrate.

## "SG3" Application Rates as per ASTM F-2170 (RH - Relative Humidity Testing)

< 85% RH = 155 ft <sup>2</sup> /gal (0.29 kg/m <sup>2</sup> )
85 - 90% RH = 130 ft <sup>2</sup> /gal (0.35 kg/m <sup>2</sup> )
90 - 95% RH = 105 ft <sup>2</sup> /gal (0.43 kg/m <sup>2</sup> )
95 - 100% RH = 80 ft <sup>2</sup> /gal (0.57 kg/m <sup>2</sup> )

notched squeegee or non-shed roller to the still moist substrate.

- **Step 2:** carefully scrub it into the pores with a long handled scrub brush.
- **Step 3:** follow with a non-shed roller to achieve uniform coverage.

Note: "SG3" is self leveling and has low viscosity, tending to flow to low areas where it can build-up.

"SG3" does not require broadcasting of sand.

- ⇒ Protect fresh application from rain for 4 - 6 hrs.
- ⇒ Observe relative humidity and Dew Point when installing flooring system over "SG3"!

⇒ Shoes must be protected with cloth (i.e. Tyvek) booties when walking over cured "SG3" prior to installation of flooring system!

### 5. Resinous Flooring:

- Subsequent top coatings such as epoxy, terrazzo, polyurethane, must be applied within the 12 hr to 5 days recoat time.
- "SG3" surface must be roughened if recoat time is missed. Re-treat "outgassing channels" and pin-holes by grinding surface, cleaning off residue. Make sure surface is dry and re-apply "SG3". Does not apply to "fish eyes".

### 6. VCT, Sheet Vinyl, Carpet, Wood:

- Flooring systems including VCT, sheet vinyl, linoleum, carpet and wood must be applied within the 12 hr to 5 days recoat time.
- Please note that water based adhesives require a cementitious underlayment of minimum 1/8" (3 mm) thickness to absorb moisture from the adhesive (check with adhesive manufacturer).

- Pressure sensitive adhesives installed directly over "SG3" require a longer "tack" time than listed on manufacturer's literature to prevent adhesive moisture or solvent entrapment.
- Many floor covering materials (i.e. VCT, sheet vinyl, linoleum, carpet) also require a more level or smooth surface. In such cases an application of a self-leveling cementitious underlayment (minimum 1/8" (3 mm) thickness) is required over "SG3" to provide a proper substrate for the floor covering and the adhesive.

### 7. Underlayment's & Patching:

- If cement based toppings, such as underlayments, screeds, "flash" patching, repair mortars are to be used, the manufacturer's recommended primer must be applied over "SG3".

### 8. Sand:

Where a broadcast of sand is desired use Aquafin "SG2" in lieu of "SG3".

- Maximum recoat time** (adhesives included) is 5 days. Do not apply flooring system if "SG3" surface is wet due to dew point or other causes. If recoat time is missed, "SG3" surface must be sanded, cleaned with hot water, and allowed to dry, before application of flooring system.

### 10. Application equipment needed:

Notched squeegee, 1/2" or 3/8" non-shed synthetic nap roller, long handled scrub brush.

### 11. Cleanup:

Immediately clean all equipment and tools with mineral spirits.

### 12. Packaging & Shelf Life:

- **2.4 gal/22 lb (9.2 L/10 kg) kit.**  
A-Comp: 1.5 gal/14.48 lb (5.8 L/6.58 kg)  
B-Comp: 0.9 gal/7.52 lb (3.4 L/3.42 kg).
- **7.3 gal/66 lb (27.5 L/30 kg) kit.**  
A-Comp: 4.6 gal/43.43 lb (17.3 L/19.74 kg)  
B-Comp: 2.7 gal/22.57 lb (10.2 L/10.26 kg).

Shelf life is 2 years in closed, original packaging, stored in a dry, cool place.

## Technical Data

Material & Color	2-component, clear epoxy	
Density	~9.08 lbs/gal (1.09 ± 0.02 kg/L)	
VOC Content	0 g/L	
Volume Solids	100 %	
Flash Point: Part A	>212°F (>100°C)	
Part B	>248°F (>120°C)	
Mixing Ratio	100:50 (by weight)	
Viscosity	(600 ± 80 mPa*s) at 77°F (25°C)	
Pot Life, approx.	35 Minutes at 73°F (23°C)	
Open to Foot Traffic	after 12 hrs at 73°F (23°C)	
Recoat Time at 73°F (23°C)	minimum 12 hrs max. 5 days, observe dew point!	
Working Temperature	50°F to 95°F (10°C to 35°C)	
Curing Temperature	minimum 50°F (10°C)	
Full Strength	after 7 days at 73°F (23°C)	
Adhesion to Concrete (ASTM D-4541 modified)	500 psi (3.5 MPa) @ 7d (dry conc.) Failure in substrate	
pH 14 Resistance	Pass 14 day test. (ASTM D-1308)	
Average Critical Radiant Flux (CRF)	1.00 W/cm <sup>2</sup> - Passed = non-flammable (ASTM E 648-03)	

All data are average values obtained under laboratory conditions. In practical use temperature, humidity and absorptivity of the substrate may influence the above given values.

### 13. Note:

Post-cracking of the concrete, slab warping or warping relaxation at joints or cracks after installation of the "SG3" may cause a breach in the coating and void warranty.

### 14. Safety: KEEP OUT OF REACH OF CHILDREN.

Refer to MSDS. FOR COMMERCIAL USE ONLY.

**Part A** - irritant; sensitizer - contains epoxy resins.  
**Part B** - corrosive; sensitizer - contains amines.

Avoid contact with skin and eyes and prolonged inhalation. Wear chemical resistant gloves and safety goggles. After contact with skin, wash immediately with water and soap and rinse thoroughly. In case of eye contact, rinse opened eye for several minutes under running water and immediately seek medical advice. After inhalation supply fresh air and call doctor for safety reasons. Use NIOSH/ MSHA approved vapor respirator in poorly ventilated areas.

LIMITED WARRANTY: AQUAFIN, INC. warrants to the owner of the premises at the time of installation that for a period of 10 years after installation its products are free of manufacturing defects. As the sole remedy, we will replace or, at our election, refund the purchase price of, any product which is proven to be defective, provided that the product was properly applied. Our product recommendations are based on Industry Standards and testing procedures. We assume no warranties either written, expressed or implied as to any specific methods of application or use of the product. AQUAFIN, INC. MAKES NO WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. AQUAFIN, INC. shall not be liable for damages of any sort including without limitation indirect or consequential damages, down time, or delay. This limited warranty is not transferable without AQUAFIN's prior express written consent.