

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
- ☑ ASTM E 96 perm rating ≤ 0.10
- ☑ 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 = 1 pt.)

Product Description

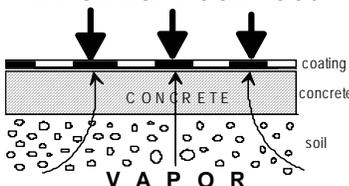
AQUAFIN® VAPORTIGHT COAT®-SG3 (in short "SG3") is a unique 2-component, moisture tolerant, low viscosity, solvent free, chemically enhanced epoxy based product which reduces the passage of water vapor and moisture through slabs on or below grade, thus eliminating delamination of adhesives, floor coverings and coatings. "SG3" can be used as a stand-alone coating. Add "SG2/3-ACCELERATOR (4-5 hrs. Fast Cure) where time is of the essence (see data sheet 5.1.4).

"SG3" reduces water vapor transmission levels of up to 25+ lbs/24 hrs•1000 ft² to 3 lbs or less (100% RH to $\leq 75\%$) 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 or radon infiltration.

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, Schools, Supermarkets, Food processing plants, Airplane hangars, etc.

Call Aquafin for: Residential slabs & garages before application. • Slabs with floor heating.

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.
- "SG3" passed Indoor Air Quality Material Emissions Test as per DIN EN ISO 16000 (Report CT-10-06-22-01:250005/2-3)

Testing for Contaminants

Request owner or owner's representative of facility to core test slabs with unknown history (i.e. old slabs, existing flooring failures, etc.) for contaminants (i.e. hydro-carbons, other organic compounds, un-reacted water soluble silicates, chlorides, 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 to Aquafin before commencing application.

Water-Vapor Emission Testing

AQUAFIN recommends, but does not require, "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 ft² (grams/hr•m²) and/or in -situ relative humidity probe test (RH-%) as per ASTM F 2170.

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 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.
3. Burn off reinforcing fibers and vacuum remains.
4. Remove glaze from "quarry tiles".
5. Repair larger cracks with a suitable patching mortar. Seal small or hairline cracks with "SG3".
6. Install cementitious underlayment (i.e. LEVEL-Ultra), leveling mortars, flash patching, etc. using a primer for non-porous substrates (i.e. AQUAFIN-SLU PRIMER) on TOP of "SG3". Contact AQUAFIN in writing prior to application of "SG3" over any underlayment.
7. Treat saw cut and expansion joints as per application Guideline 5.1.1-1.

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 over any gypsum based products or 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 area to be treated and uniformly distribute with a notched squeegee.
 - Step 2: follow with a non-shed roller, back rolling at right angle (90 degrees) to the squeegee application to achieve uniform coverage and let product cure for minimum 12 hours.

Note:

- a. Cure time of 2.4 gal. kit can be shortened to 4-5 hours by adding SG2/3-ACCELE-

Sample Water Vapor Transmission Reduction

Test : ASTM E 96

Tests carried out by independent laboratories (Wet method)	BEFORE: Untreated Control	AFTER: VAPORTIGHT COAT®-SG3	
Water Vapor Transmission: ♦ lbs / 24 hours * 1000 ft ²	24.08	Sample A, No.1 0.18 (Mactec, 3/17/06)	Reduction 99%
Vapor Permeance: ♦ grains/hour/ft ² /in.Hg	3.17	0.10 @ 16 mils (Nelson Testing, 01/08/14)	ASTM F3010-13

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

Moisture vapor emission rate lb/24 h • 1000 ft ²	g/h/m ²	No. of coats	Application rate		Appx. thickness		~Yield: 2.4 gal (9.2 L)		~Yield: 7.3 gal (27.5 L)	
			ft ² /gal	kg/m ²	mils	mm	ft ²	m ²	ft ²	m ²
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 - 25	3.0 - 5.0	1	100	0.45	16	0.40	240	22.3	730	67
Stand-alone coating on slabs		1	90	0.50	18	0.45	215	20.0	655	61
New concrete (min. 5 days old)		1	100	0.45	16	0.40	240	22.3	730	67

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 or ASTM F-2420 (RH - Relative Humidity Testing):

<85% RH	= 155 ft ² /gal	(0.29 kg/m ²)
85 - 90% RH	= 130 ft ² /gal	(0.35 kg/m ²)
90 - 100% RH	= 100 ft ² /gal	(0.45 kg/m ²)

TOR during the mixing process. Refer to data sheet 5.1.4.

- "SG3" is self leveling and has low viscosity, tending to flow to low areas where it can build-up.
- "SG3" can be applied to damp (no puddles) or dry substrates.
- "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"!
- Walk over cured "SG3" with 'clean' shoes only prior to installation of flooring system!

5. Resinous Flooring:

- Indoors, subsequent top coatings such as epoxy, terrazzo, polyurethane, must be applied within the 12 hrs to 5 days recoat time. Outdoors, call for guidance.
- "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 hrs. to 5 days recoat time.
- Please note that water based adhesives require a cementitious underlayment (i.e. LEVEL-Ultra, etc.) 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 such as LEVEL-Ultra or equal (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 or AQUAFIN-SLU 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 epoxy rated nap roller, etc.

11. Cleanup:

Immediately clean all equipment and tools with mineral spirits.

12. Packaging & Shelf Life:

- 0.24 gal/2.2 lb (0.9 L/1.0 kg) kit.
- 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.

13. Note:

Post-cracking of the concrete, slab warping or

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 cps (mPa*s) @ 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 ² - Passed = non-flammable (ASTM E 648-03)	
Methane Permeability (ISO 15105-2)	2.20 [cm ³ / (m ² *d*bar)] at 36 mils (0.90 mm) thickness	
Indoor Air Quality Control (DIN EN ISO 16000)	Passed: VOC (0 mg/m ³) & Formaldehyde emissions (<0.01 ppm)	

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

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.

15. 15-year Warranty: offered to AQUAFIN trained applicator for interior flooring systems only. Prior approval at design stage is required from Aquafin.

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.