

Oil & Water Vapor Barrier Coating

- ✓ 10-year successful track record
- ✓ Full broadcast system
- ✓ Seals oil contaminated slabs
- ✓ Secondary containment
- ✓ Reduces moisture vapor emission rates of up to 25 lbs to 3 lbs or less
- ✓ 1-coat application up to 25 lbs MVER
- ✓ Flooring system installed next day
- ✓ Covers even 5 day old concrete
- ✓ Applied to moist concrete
- ✓ High alkalinity barrier (pH 13 - 14).

Product Description

AQUAFIN® VAPORTIGHT COAT®-SG2 (in short "SG2") is a unique 2-component, moisture tolerant, extremely high density, chemically enhanced epoxy based product which prevents capillary infiltration of oil or other chemicals from the ground and can be used to treat oil-contaminated slabs after appropriate substrate preparation, such as degreasing or microbial remediation.

"SG2" reduces the passage of water vapor and moisture through slabs or walls on or below grade, thus eliminating delamination of adhesives, floor coverings and coatings.

Typical Applications

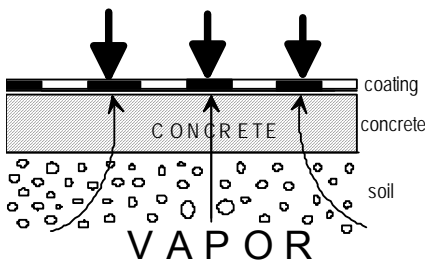
Barrier for oil + other chemicals:

Used for secondary containment or to prevent infiltration of oil and other chemicals.

Water-Vapor Transmission:

Concrete slabs, cementitious underlayment's (other than gypsum) and ceramic tiles with missing or damaged underslab vapor barriers.

VAPORTIGHT COAT-SG2



Fresh concrete slabs: 5 day old concrete.

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

- Low VOC • Vapor & water barrier
- Barrier against radon and other gases
- Excellent adhesion to steel
- Compatible with most flooring systems
- High chemical resistance • Minimal downtime
- Does not support mold growth
- Meets USDA/FSIS guidelines
- Easy to install - Minimal downtime.

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 "SG2". 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 ft² (grams/hr-m²). Alternately determine RH content (%) as per ASTM F 2170. The testing must be carried out before application of "SG2" 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 "SG2", must be clean, sound and have an "open"/absorptive surface ("tooth and suction").

⇒ Do not apply "SG2" to surfaces which have been previously treated with any kind of sealer prior to contacting Aquafin.

A. Oil contaminated slabs:

Selecting of appropriate remediation:

Citrus based degreasing agents work well for hydrocarbon contaminated slabs containing low to medium amounts of oil. However, if several degreasing cycles do not show satisfactory results, or the IR analysis reveals high concentrations of hydrocarbons the solution points to microbial remediation. Cultivated microbes or "bugs" eat oil and other organic substances such as paraffin, grease, creosote and aromatic hydrocarbons.

1. **De-greasing:** After steel shot blasting, treat surface with a de-greasing cleaning agent by the detergent scrubbing method as outlined in ICRI Guideline No. 03732. Use as many cleaning cycles as necessary. Check minimum 5 minutes with undiluted de-greasing solution for discoloration. If it discolors, carry out another de-greasing cycle and check. Dispose of the oily wastewater in accordance with federal, state and local regulations.
2. **Microbial remediation:** Follow microbial products manufacturer's instructions regarding application of microbes or "bugs".
We strongly recommend carrying out a test application of "SG2" for both remediation processes, prior to the actual application of "SG2".
3. Clean treated surface with high pressure water

4. blasting of minimum 2,500 psi.
4. The surface shall be damp/moist without standing water, when applying "SG2". *If the substrate dries before applying "SG2", oil can rise again and prevent "SG2" from bonding.*

B. Water-Vapor Transmission Treatment:

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. 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. Repair cracks with a suitable patching mortar or "SG2" broadcasted with sand.
5. Install cementitious underlayment's, leveling mortars, flash patching, ON TOP of "SG2".
6. Treat saw cut and expansion joints as per application Guideline 5.1.1-1.
7. Carefully pre-dampen all the prepared surfaces to be treated 2 - 3 times with clean water to SSD (saturated surface dry). Leave no standing water!

Mixing

⇒ Use chemical resistant gloves and goggles when mixing or applying "SG2".

⇒ Material should be minimum 60°F (15°C) at time of mixing.

⇒ Do not alter mixing ratios. DO NOT THIN.

⇒ Can not be mixed with Cab-O-Sil.

Part A (A-Component) = resin

Part B (B-Component) = hardener

are supplied in the appropriate mixing ratio.

1. Pierce a hole through the top (rubber membrane) and the bottom of Part B container. Assure that Part B completely drains into Part A. Always mix a complete kit in the proportions supplied.
2. Stir mixture for approximately 5 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 another, clean container and carefully mix it once more (approx. 30 seconds).

Application

⇒ In weather exposed areas protect the application for 4 - 6 hours (at 70°F (21°C)) from rain and moisture.

⇒ Protect from UV exposure.

"SG2" can be applied to concrete and cementitious toppings that are at least 5 days old.

1. After steel shot blasting or scarifying, check

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®-SG2 Wet Method	REDUCTION %
Water Vapor Transmission: ♦ lbs / 24 hours * 1000 ft ² ♦ grams / hour * m ²	19.24 3.91	Average of 6 samples 1.03 0.21	95
Permeance: ♦ perms ♦ grams / Pa*s*m ²	15.54 8.89 x 10 ⁻⁰⁷	0.83 4.76 x 10 ⁻⁰⁸	95

"SG2" Application Rates & Yield of 2.1 gal (8.1 L) kit

Moisture vapor emission rate lb/24 h • 1000 ft ² (g/h/m ²)	No. of coats	Application rate ft ² /gal (kg/m ²)	Yield per 2.1 gal kit ft ² (m ²)	Appx. Thickness mils (mm)			
up to 20	4	1 95	0.80	200	18.7	16	0.4
up to 25	5	1 75	1.0	160	15	21	0.5
New concrete (min. 5 days old)	1	1 95	0.80	200	18.7	16	0.4
Oil contaminated slabs	1	1 95	0.80	200	18.7	16	0.4

Walls: contact our technical dept. Note: all values theoretical. Application thicknesses are approximate. Some variations may apply due to porosity and absorption of substrate.

"SG2" Application Rates as per ASTM F-2170 (RH - Relative Humidity Testing)

< 95% RH = 95 ft²/gal (0.8 kg/m²)
95 - 100% RH = 75 ft²/gal (1.0 kg/m²)

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 "SG2" 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.).

- Outdoors, protect the area to be treated from strong sun light, wind and rain. Indoors, prevent noticeable drafts.
- Do not apply at air or slab temperature below 50°F (10°C).
- Insure that the material is applied within the coverage rate specifications by marking the area to be covered.
- Install "SG2"** as per the chart "Application Rates":
 - Step 1:** pour "SG2" in sufficient quantity over the area to be treated and uniformly distribute with a 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: "SG2" can not be sprayed.**
 - Step 4: Sand**
 - Immediately** (within 2 minutes) broadcast clean, dry, fresh water washed and dried #20 - 50 silica sand (ASTM E11 No. 18 - 35 sieve size [0.5 - 1.0 mm dia.]) to "rejection" (full broadcast), or at a rate up to 30 - 50 lb per 100 SF (1.5 kg/m²) into the fresh (wet) "SG2".
 - Carefully remove any loose sand after a curing period of 12 - 24 hrs, before applying top coating.
- Top coating:**
 - "SG2" surfaces receiving a subsequent top coating (epoxy, terrazzo, cement based topping, underlayment, thin-set tile mortar, polyurea, synthetic or rubber, etc.) must be broadcasted with sand as

described in Step 4: "Sand". If the subsequent top coating requires a primer over concrete, it should also be used over the broadcasted "SG2".

- If a smooth surface is desired (omitting sand), use "SG3" in lieu of "SG2".
 - Re-treat fish eyes, "outgassing channels" and pin-holes by grinding surface, cleaning off contaminants with Isopropyl alcohol and re-applying "SG2".
- Flooring:**
 - Flooring systems including VCT, sheet vinyl, linoleum, carpet and wood can be applied approx. 12 - 16 hrs after the initial application (as soon as the coating opens to foot traffic).
 - Please note that water or solvent based adhesives require a cementitious underlayment of minimum 1/8" (3 mm) thickness to absorb excess moisture (check with adhesive manufacturer).
 - Pressure sensitive adhesives installed directly over full #50 - #70 sand broadcasted "SG2" require a longer cure time than listed on manufacturer's literature to prevent adhesive moisture 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 to provide a proper substrate for the floor covering and the adhesive.
 - Application equipment needed:**
Soft-edge squeegee, non-shed synthetic roller, long handled scrub brush.
 - Cleanup:** Immediately clean all equipment and tools with mineral spirits.
 - Packaging & Shelf Life:**
2.1 gal kit = 33 lbs (8.1 L = 15 kg), or
 - 29.5 lb (13.39 kg) "A-Component" (resin)
 - 3.5 lb (1.61 kg) "B-Component" (hardener).
 Shelf life is 2 years in closed, original packaging, stored in a dry, cool place.

Note:

- Post-cracking of the concrete, slab warping or warping relaxation at joints or cracks after installation of the "SG2" may cause a breach in the coating and void warranty.
- Assure that slab is thoroughly pre-dampened to avoid formation of pin holes.
- Can not be mixed with Cab-O-Sil.

Technical Data

Material	2-component epoxy	
Color	White	
Density	15.49 lbs/gal (1.86 kg/L)	
VOC Content, mixed	0.5 lbs/gal (55 g/L)	
Volume Solids	97 %	
Flash Point: Part A	>212°F (>100°C)	
Part B	170°F (77°C)	
Mixing Ratio	100:12 (by weight)	
Pot Life, approx.	60 Minutes at 75°F (24°C)	30 Minutes at 85°F (30°C)
Open to Foot Traffic	after 12 hrs at 73°F (23°C)	
Curing Temperature	minimum 46°F (8°C)	
Full Strength	after 7 days at 73°F (23°C)	
Compressive Strength	> 11,000 psi (>80 MPa)	
Flexural Strength	> 4,300 psi (>30 MPa)	
Adhesion to Concrete	(ASTM D-4541 modified)	
• New concrete (5 d)	110 psi (0.8 MPa)	
• Moist concrete (28 d)	550 psi (3.8 MPa)	
• Dry concrete (28 d)	580 psi (4.0 MPa)	
	Failure in substrate	
Temperature Resistance		
a.) Continuous:		
• Dry heat	140°F (60°C)	
• Humid	113°F (45°C)	
b.) Intermittent:		
• High pressure water	185°F (85°C)	
	248°F briefly (120°C)	
• Dry heat	140°F (60°C)	

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.

Safety: 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.
KEEP OUT OF REACH OF CHILDREN.

Spills: Ventilate area. Contain and collect spillage with noncombustible, absorbent materials (i.e. sand, vermiculite, universal binders, sawdust, etc.) and place in container for disposal. Emergency procedures are not required. Dispose of in accordance with current local, state and federal regulations. **VOC limit:** This product is well below the allowable EPA limits as stated in 40 CFR Part 59.

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.