



S-102

Concrete Waterproofing

Product Information Sheet

PRODUCT DESCRIPTION

Formulation: SINAK Sealer S-102™ was formulated to waterproof, preserve and protect concrete by working with the chemistry of concrete. It penetrates the concrete, and combines with the soluble calcium compounds to form additional insoluble silicate structure within the concrete. The newly-formed breathing protective barrier retains all of the properties of healthy concrete except one: The extreme moisture attraction of the calcium hydroxide normal to the capillary channels in the concrete is neutralized because of its conversion to an insoluble compound.

The appearance and surface profile of the treated concrete is unaffected, and there is no coating or film that can be worn or weathered away.

Usage: Because of the way in which it functions, the S-102™ provides protection in numerous applications: Under abrasive traffic as well as non-traffic conditions; below grade as well as above grade; vertical and horizontal. Recommended application is for most types of precast, cast-in-place, and shot-on concretes; for decks, walls, roads, bridges, sidewalks, driveways, exposed slabs, dams, reservoirs, tilt-up structures, median barriers, and shotcrete structures.

Function: SINAK S-102™ provides waterproofing protection for concrete; provides protection from chloride ion penetration; increases surface abrasion resistance; provides surface-scaling and freeze-thaw protection; and provides protection against food, oil and chemical staining and damage. S-102™ does not interfere with the bonding of crack repair, patching, or surface coating materials.

Limitations: For precast, cast-in-place, and shot-on concrete only. S-102™ is not for use on concrete block or masonry. Sealer will not seal structural cracks. Sealer should not be applied in temperatures below 40°F. See details under "INSTALLATION."

Composition and Materials: SINAK S-102™ is a water-based liquid containing sodium silicate with a proprietary formula in solution. It requires NO mixing, diluting or agitation. Color: Water clear; Specific Gravity: 1.1; Net Weight per Gal: 9.2 lbs;

Dry Solids Content (by weight): S-102: 11.1 %; Flash Point: none; Toxicity: Non-Toxic; VOC: Contains NO volatile organic compounds or solvents.

TECHNICAL INFORMATION

SINAK S-102™ works by penetrating into the concrete, and is attracted by the calcium hydroxide within. The sealer will penetrate even against considerable hydrostatic pressure. The sealer reacts with the soluble calcium compounds to form additional insoluble calcium silicates which cannot be removed chemically or physically. The reaction has a consolidating (gluing/cementing) effect that will increase the durability of treated concrete. The sealer is capable of penetrating up to 1.5 inches depending on the porosity and permeability of the concrete.

TESTING

Testing of SINAK Sealers has been conducted with two primary objectives: (1) to prove superior performance; and (2) to ensure a close and consistent correlation between laboratory and field results.

Chloride Ion Penetration (AASHTO T 259, based on abraded specimens - linseed oil-treated control)

Sample Depth	Chloride Content (lbs/cu yd)		Percent Improvement
	Linseed	S-102™	
1/16" to 1/2"	4.98	2.50	49.8%
1/2" to 1"	0.34	.04	88.2%

Surface Abrasion Resistance (ASTM C 501)

Increase in abrasion resistance after 1,000 cycles as measured by:

Wear Index:	38% Improvement
Depth of Wear:	21% Improvement

Surface Scaling (ASTM C 672)

Non-air entrained concrete after 50 freeze-thaw cycles:

	Untreated Control	S-102™ Treated
Scaling	Slight to Moderate	None
Weight Loss	1.5%	None

Freeze-Thaw Testing

(AASHTO T 161/ASTM C 666)

Frost-resistant concrete

Scaling After	Untreated Control	S-102™ Treated
146 Cycles	Slight	None
237 Cycles	Slight	None
480 Cycles	Slight	None

Bond Strength of Epoxy Systems (ASTM C 882 - Shear strength)

No failure of epoxy bond to sealer-treated shear surfaces. (Concrete failed in compression.)

Pull Tests - Epoxy

No failure of epoxy bond to sealer treated flat surfaces. (Concrete failed in tension.)

Bond Strength of Urethane Systems (Shear and tensile)

Withstood 4 to 5 times the stress for the stated movement capability specified by the manufacturer.

The untreated sample had obvious leakage. There was NO leakage through the treated sample.

Hydrostatic Pressure Test

Applied Pressure: 100 psi
Duration: 24 Hours

Specimen	Absorption
Untreated	120 ml
S-102™ Treated	7ml

The untreated sample had obvious leakage through the treated sample.

INSTALLATION

General Application Instructions:

If possible, the application should be a continuous process from start to finish of the project. If for any reason the application is interrupted, see 'Interrupted Applications' at the end of this section.

1. Remove all coatings or substances that may prevent penetration of the sealer (e.g. curing agents, coatings, sealants, dirt, surface oil, efflorescence, standing water).
2. Protect objects from overspray; especially glass, metals, ceramics, glazed tile and wood. Protect all windows, doorways, lights, etc. with polyethylene film and waterproof tape. DO NOT remove protection until after completion of final water spray application (see below). Protect or remove all personal items (e.g. eyeglasses, jewelry, watches).
3. Apply sealer in light, even coats, barely wetting the surface, with a garden or airless sprayer. Minimum 2 coats. (Typical job requires 3 to 4 coats.) DO NOT ap-



ply sealer in heavy coats. Immediately after the first coat is dry, apply a second coat. NOTE: "Dry" means dry to the touch and the concrete has returned to original color. Drying time will vary from 10 to 30 minutes depending on temperature/environment. If a light sheen is visible when the second coat is dry, STOP APPLICATION. If not, repeat coats until a light sheen is apparent. Apply only as much sealer as the surface will readily absorb. Areas that absorb sealer at a faster rate (dry spots) require additional coats. WARNING: Excess sealer left to dry on the surface may result in a white scaly residue that is difficult to remove. DO NOT allow sealer to puddle or "run" on the surface. Sweep excess to an adjacent area, or wipe with a damp cloth, or mop it up.

4. After the final coat of sealer is dry, wet the entire treated area with a light water spray. The surface should dry dull, like untreated concrete. If a sheen is still apparent, repeat the water spray application cycle until the surface does dry dull like untreated concrete.

NOTE: In most cases two water spray applications are required. Under some circumstances more than two water spray applications may be required.

IMPORTANT: The treated area is immediately available for foot and vehicle traffic after the last water spray application is dry to the touch; but DO NOT cover the treated area with any low permeability covering (e.g. paint, elastomeric coatings, seamless coverings) for a minimum of 14 days while the sealer is curing. Breathable cementitious coatings or patching materials may be applied after 48 hours; as can crack repair materials and parking lot striping.

5. Clean all equipment by rinsing with water.

INTERRUPTED APPLICATIONS: If an application is interrupted before completion, mark the place of interruption, and WET DOWN THE ENTIRE TREATED AREA with a light water spray before leaving the job. Continue the job at a later time, resuming the application at the marked place of interruption, and follow all the application steps just as if there was no break in the procedure.

If the job should be interrupted by rain, follow the same procedure as above, wetting down the entire treated area, NO MATTER HOW HARD IT RAINS! This will ensure proper penetration.

HOT WEATHER APPLICATION: In direct sunlight if concrete is hot to the touch (above 100°F), cool the surface before application by lightly dampening it with a water spray. Allow the surface to dry completely; and begin application immediately after the surface has dried. Lightly water spray the treated area between sealer coats. This is to prevent the sealer from drying on the surface. Follow the General Application Instructions.

COLD WEATHER APPLICATION: Cooler temperatures cause sealer penetration at a slower rate. Allow ample time between coats for complete penetration until the surface is dry. DO NOT apply sealer in temperatures below 40°F; or if the temperature is expected to drop below 32°F within a 24-hour period. Follow the General Application Instructions.

OUTDOOR APPLICATION: Sealer may dry prematurely windy conditions. Minimize overspray by holding spray nozzle closer to surface. If rain is expected within a 24-hour period, DO NOT apply sealer. If it does rain within 24 hours after application, another application may be required. Contact local distributor or SINAK Corporation for assistance.

In case of rain, or if rain is expected within 48 hours from application, do not remove protection from glass or other areas until rain ceases. Follow General Application Instructions.

For New Concrete: Apply sealer after concrete has cured for a minimum of 14 days. For optimum results allow concrete to cure for 28 days or longer.

COVERAGE RATES:

S-102™ coverage is 150-250 square feet per gallon, finished application. Finished application means including all coats of applied S-102™.

These figures are estimates and may vary since the SINAK Sealer formulas are true penetrants, and substrate and environmental conditions fluctuate. For additional information, contact the nearest distributor or SINAK Corporation.

PRECAUTIONS:

FOR USE ON CONCRETE SURFACES ONLY. SINAK Sealers will permanently damage glass, metals, wood, jewelry, and glazed materials by streaking, whitening, or staining.

Excess sealer left to dry on the surface may result in a white, scaly residue that will be difficult to remove.

STORAGE AND HANDLING:

Store in cool dry area out of direct sunlight. Must be kept in tightly secured containers to prevent evaporation and contamination. All SINAK products MUST be protected from freezing. Product that has frozen will not function as intended, and should be discarded.

AVAILABILITY

SINAK Sealer S-102™ is available in 5-gallon plastic pails, 55-gallon steel drums and 275-gallon biodegradable totes from selected distributors.

MAINTENANCE

After application, no special maintenance is required.

WARRANTY

SINAK Corporation warrants its products to be of the highest quality. Since application of the product is a crucial factor in obtaining satisfactory results, and is beyond the control of SINAK Corporation, refund of purchase price or replacement of product shall constitute the limit of SINAK Corporation's liability. SINAK Corporation makes no other warranties, expressed or implied. This warranty may not be modified or extended by representatives of SINAK Corporation, its distributors or dealers.

Extended warranties may be provided by the manufacturer for specific projects under SINAK Corporation's Certified Applicator Program. These extended warranties cover labor and materials for retreatment. If the concrete itself cannot be waterproofed (excluding cavities and structural cracks), SINAK Corporation will issue a full refund for all product and shipping costs incurred.

TECHNICAL ASSISTANCE

Technical assistance is available from the manufacturer, from trained field-representatives, and from Certified Applicators.



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