

# ARMOR GUARD LIQUID HARDENER™



Stone Mountain  
Concrete Solutions

## LIQUID DENSIFIER, SEALER AND DUST PROOFER FOR CONCRETE

### Description

LIQUID HARDENER is a water-based lithium silicate solution used to densify, seal and dustproof concrete surfaces. LIQUID HARDENER penetrates and chemically reacts within the concrete surface, producing extremely hard and dense calcium silicate hydrate (CSH) in the pores. The result is concrete that is more durable, easier to clean, and more resistant to damage from water and mild chemicals. Because the product of the lithium silicate-concrete reaction is formed internally, the protection of LIQUID HARDENER never peels or flakes off, is unaffected by moisture, and lasts much longer than surface sealers and coatings.

### Primary Applications

- Warehouse floors
- Manufacturing plants
- Distribution centers
- Transportation terminals
- Institutional floors
- Health care facilities
- Clean rooms
- Mechanical rooms

### Features/Benefits

- Seals, densifies and dustproofs concrete in one operation
- Water-based, low VOC
- Treated concrete is more dense and durable
- Permanent treatment that never peels off
- Makes concrete easier to maintain

### Technical Information

#### Physical Properties at 70°F (21°C)

Form	Clear, thin liquid
Specific Gravity	1.10
pH	11.7
Density	9.2 lb/gal (1.1 kg/L)
Solids/Active Content	15%
VOC Content	≤5 g/L
Freeze Point	32°F (0°C)

### Packaging

LIQUID HARDENER is packaged in 55 gallon drum (208L), 5 gallon pails (18.9L) and 1 gallon (3.79L).

### Shelf Life

2 year in original unopened container.

### Specification/ Compliances

Test Data	
ASTM C672 Freeze Thaw Scaling	0.0%
ASTM E96 Water Vapor Transmission Rate	5 to 7 grains/per hour/ft <sup>2</sup>
Water Absorption ASTM C642, 50 days	<2 % reduction
ASTM E303 SCOF Wet or Dry (pass > 0.5)	0.6 to 0.8
ASTM C779 Abrasion Resistance Increase Wear Resistance vs. Control	200 to 400%
Yellowing	none
V.O.C.	0g/L

## Coverage

1 gallon (3.8 L) of LIQUID HARDENER will cover from 250 to 800 ft<sup>2</sup> (23 to 74 m<sup>2</sup>) of concrete depending upon the texture and porosity of the surface.

## Directions for Use

LIQUID HARDENER should be used directly from the container and requires no dilution or pre-mixing.

**Surface Preparation (New Concrete):** Cure the concrete by a wet or sheet cure method in accordance with ASTM C-171, or with a curing compound that meets the requirements of ASTM C 309. SMCS's dissipating curing compound CLEAR CURE DR is recommended. To maximize strength and other physical properties of the concrete slab, new concrete should cure seven days or longer before application of LIQUID HARDENER. For fast track projects, the cure time may be reduced at the discretion of the project engineer. If a curing compound is used, it must be completely removed before application of LIQUID HARDENER. After the curing method is removed, allow the slab to air dry a minimum of 24 hours prior to application. Insufficient drying of the concrete will prevent full penetration of LIQUID HARDENER reducing its effectiveness.

**Surface Preparation (Existing/Older Concrete):** Concrete must be clean and free of any materials that could prevent penetration of LIQUID HARDENER, such as curing compounds or cure & seals, paints, coatings, dirt/oil, waxes, etc. If necessary, use Clean & Strip to remove these contaminants before applying LIQUID HARDENER.

**Application (New or Old Concrete):** Air temperature during application must be between 35°F and 100°F (2°C and 38°C) for proper chemical reaction of the LIQUID HARDENER. Apply a single coat of LIQUID HARDENER using a low pressure sprayer equipped with a 0.5 gal/min (1.9 L/min) spray tip. Apply at a coverage rate that results in a uniformly wet surface without puddles. While LIQUID HARDENER is still wet, use a soft-bristle broom or microfiber pad to redistribute and evenly spread out the material. Do not continue to brush or spread out LIQUID HARDENER once the product begins to dry. Keep the floor wet with LIQUID HARDENER for 5-10 minutes.

Do not allow excess LIQUID HARDENER to puddle and dry on the floor. This may result in a white residue that must be removed immediately with scrubbing.

If immediate surface sheen is desired, dry buff or burnish the floor with a polishing pad appropriate for the desired end gloss result.

**Floor Joints:** If the floor joints are to be filled after LIQUID HARDENER has been applied, they must be thoroughly cleaned before installation of joint filler. Cleaning joints by circular concrete saw or a grinder equipped with a wire wheel is recommended.

## Clean-Up

Clean up tools and equipment with soapy water.

## Precautions/Limitations

- Protect from freezing. In the event of freezing, thaw and stir or agitate before using.
- Protect metal, glass, wood, paint or brick from contact with LIQUID HARDENER. If accidentally over-sprayed on these surfaces, wash surface with clean water immediately.
- If added abrasion resistance is required in new construction, consider the use of a dry shake floor hardener.
- Allow the product to dry 4 to 6 hours at 70°F (21°C) before exposure to foot traffic or rain.
- In all cases, consult the Safety Data Sheet before use.

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