

## **DIAMOND SEAL HARDENER DENSIFYING SEALER FOR POLISHED CONCRETE**

**PRODUCT DESCRIPTION:** Specco Diamond Seal Hardener is a specially formulated lithium silicate based solution which is used as a hardening and densifying sealer in polished concrete applications. It is a ready to use, colorless, odorless, penetrating, protective concrete sealer. Diamond Seal Hardener works by reacting with free lime (calcium hydroxide) which is present in the normal cement hydration process. The conversion of the free lime to CSH (calcium silicate hydrate), the principle binder material that hardens cement with the aggregates in concrete, fills any open capillary pores with additional CSH binder, thereby forming an insoluble bond. This void filling reaction produces a denser concrete which has a smoother, flatter surface that can reflect light more evenly, creating a shinier concrete. Resulting surfaces have been shown to be much more abrasion resistant, which helps protect against wear and possible efflorescence as the open capillaries become more impermeable. Lithium silicate treated surfaces can also help counter the effects of A.S.R. or reactive aggregates when they are present in the concrete.

**USES:** Typical diamond polishing applications include warehouse floors, schools, retail, lobbies, hospitals, airports, showrooms, as well as decorative precast concrete polishing such as counter or table tops.

**BENEFITS:** ENHANCES POLISHED CONCRETE SURFACES...ALLOWS GREATER SHINE...RESISTS BLACK RUBBER WHEELED TIRE MARKS...DECREASED PERMEABILITY OF THE SURFACE.... MAINTENANCE FREE FLOORS ARE EASIER TO CLEAN SINCE THE NEED FOR WAXING IS ELIMINATED...REACTIVE SEALER BECOMES PART OF THE CONCRETE, CANNOT CHIP, LIFT OR PEEL...MOST SILICATE TREATED FLOORS MEET ADA SLIP RESISTANCE TESTING REQUIREMENTS...ODORLESS, NON YELLOWING ,VOC COMPLIANT WATER BASE FORMULATION

**COMPOSITION:** Water based lithium silicate dispersions with added penetrating agents.

<b>PHYSICAL DATA:</b>	<b>APPROXIMATE VALUES @ 70 °F (21.1°C):</b>
Color:	Clear light blue solution
Weight/gallon:	8.70 lb.
pH:	10.0 +/- 0.50 (Alkaline)
V.O.C. levels	Contains no VOC's
Viscosity (Brookfield):	10 cps
% Solids (Lithium):	4.30%
% Actives (Total):	18.79%

**SURFACE PREPARATION: EXISTING (OLD) CONCRETE:** Surfaces to be treated must be structurally sound, clean and free of all contaminates, resins, or previously applied sealants that will prevent the penetration of Diamond Seal Hardener. First use Specco C-20 Cleaner and Degreaser or C-25 Degreaser Concentrate for removal of any grease or oil contaminants on the old concrete surface if they are present. Next use Specco C-24 Acid Etcher or C-27 Surface Cleaner for removal of all other surface contaminants that may be present. It is important to prewet the surface before application of the acids, and to washdown the entire surface after the etching process is complete. Repair all cracks, voids, or surface popouts prior to applying Diamond Seal Hardener by use of either Specco B-50 epoxy grout or Specco V-40 vinyl patch cement.

**NEWLY POURED CONCRETE:** Recommended concrete mix designs should be 4000 psi minimum with no air entrainment and less than 10% fly ash. Newly placed concrete should be cured a minimum of 7 days, but preferably 28 days old to allow excess moisture (which inhibits sealer penetration) to escape. Surfaces should have been cured by water spray, damp burlap, or visqueen methods only (no resins or curing compounds that would inhibit penetration of the Diamond Seal Hardener).

**NEWLY POURED CONCRETE (Continued):** If resin based curing compounds were used, these will need to be removed prior to installing the Diamond Seal Hardener. It is not necessary to use any degreasers or cleaning solutions on the newly poured concrete unless newly formed surface stains are visible.

**DIRECTIONS: SURFACE PREPARATION:** The successful application of Diamond Seal Hardener is dependent upon the grinding and polishing techniques used by the contractor. Applicators should be experienced in the use of silicate hardening materials as well as the use of grinding and polishing equipment. The composition of the concrete, flatness, finishing and curing will all have an effect on the final surface shine. These conditions will determine the depth required by the grinding process and the required grinding discs and polishing pads. In most cases, the surface must be initially ground with the appropriate diamond grinding disc to both level and expose (open) the floor surface. After the initial grinding, the floor should be cleaned and allowed to dry.

**APPLICATION:** Diamond Seal Hardener is typically applied by low pressure spray. Coverage is typically 200 square foot per gallon, but will vary with substrate porosity as more porous floors will absorb heavier. Completely saturate the floor, then continuously work the sealer into the surface by stiff bristle broom or floor scrubber with black pads for a minimum of 20 minutes. It is important to keep the floor completely wet once the scrubbing process is begun by adding additional water as needed, which also aids penetration. After the 20 minutes has elapsed, any excess material on the surface should be rinsed and flushed completely from the floor. The polishing sequence can then begin, using progressively higher disc grit sizes until the level of sheen required is obtained. In the later polishing steps (approx. 800-1000), to produce an even higher shine, an additional "light coat" of Diamond Seal Hardener can be applied at 700-800 ft<sup>2</sup>/gallon. This material should be scrubbed with the floor buffer using black abrasive pads, taking care not to let the surface dry as before, then flush the remaining residue off of the floor. Allow this coat at least 4 hours of curing, which will increase additional CSH in the surface, before continuing the polishing sequence to higher grit sizes. After final polishing and drying, floors can be open to traffic and do not need additional treatments. Allow the surface to dry 12 hours before exposing to foot traffic, 24 hours for vehicles. To maintain gloss, cleaning should be done on a regular basis to reduce abrasive sand or dirt contaminates.

**CAUTIONS:** Do not dilute or thin. Diamond Seal Hardener is considered a penetrating hardener and is not a film forming type sealer. When Diamond Seal Hardener is applied excessively (puddled) and allowed to dry in this condition without being rinsed down after 20 minutes with water. a white residue may remain on the surface of the treated substrate. This white residue consists primarily of excessive potassium or lithium carbonate salts that are difficult to remove without additional polishing or scrubbing. Do not apply in temperatures below 55° F or above 90° F. Do not apply to frozen or frost filled surfaces. The treated surface will be slippery during application and until dry. Surfaces treated with Diamond Seal Hardener or other silicate based sealers are not compatible with vinyl floor adhesives, or many other floor covering adhesives as the final substrate is rendered water impermeable, but still breathable. Keep from freezing.

**WARNINGS:** Avoid contact with skin and eyes. Wear protective clothing and safety glasses during application. Keep away from food and drink. Do not take internally. Refer to product M.S.D.S. (Material Safety Data Sheet) for further health and safety information. **FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN. H.M.I.S.**

**CODES:** HEALTH = 1, FLAMMABILITY= 0, REACTIVITY = 0, PERSONAL PROTECTION = C (GLOVES, GOGGLES, APRON)

**SHIPPING NAME:** Concrete Sealer -Water base

**SHIPPING CLASS:** ITEM 33880, SUB 2, LTL 55

**PACKAGING:** 1 gal.(3.78L), 5 gal.(18.9 L), 55 gal.(208 L) 265 gal. tote (1000L) **SHELF LIFE:** 1 year properly stored @ 60° to 80° F

**LIMITED WARRANTY:** This product is warranted to be of merchantable quality when used according to the instruction herein. It is not warranted to be suitable for any purpose or use other than the general purpose for which it is intended. Liability under this warranty is limited to the replacement of the product as purchased, if found to be defective upon inspection by the manufacturer. This limited warranty is issued and accepted in lieu of all other expressed warranties and explicitly excludes liability for consequential damages. Buyer assumes all risk and liability resulting from the use of this product.

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