



Product Data Sheet & Application Guide

DENSIFIER For Polished & Burnished Concrete LP

PREMIUM, READY-TO-USE, WATERBORNE
LITHIUM / POTASSIUM SILICATE PENETRATING
CONCRETE DENSIFIER / HARDENER

DENLP-PDS-03-16-20

DESCRIPTION:

Smith's Densifier LP is a Premium, Waterborne, Lithium / Potassium Silicate blend penetrating solution used to densify and surface harden concrete. Smith's Densifier LP chemically reacts with Calcium Hydroxide found in cement-based substrates forming crystals in the concrete matrix improving durability, scratch resistance, surface strength, lessens efflorescence and dusting of concrete. Offers fast return to service.

RECOMMENDED USE:

- Concrete Densifier for Mechanical Concrete Polishing
- Seals Power-troweled Concrete surfaces

HIGHLIGHTS:

- Ready-to-Use & Fast Return to Service
 - Absorbs & Reacts Fast
 - Better Value – Reduces Labor time with single step application
 - Easy to Apply – NO Rinse, Flush or Waste Water
 - Traffic may resume in as little as 1 hour after treatment
- Increases Durability, Appearance & Light Reflectivity
 - Chemically Reacts with Calcium Hydroxide in Concrete
 - Improves Surface Hardness of Concrete – New or Existing
 - Doesn't contribute to Near Surface ASR
 - Breathable
 - Will not Amber or Peel
- Low Odor & Low VOC's – Meets Source Specific Standards Rule 1113 established by AQMD in California as well as all OTC Regional restrictions
- Reduces Maintenance
 - Easy to Clean
 - No Waxing
 - Fights Dusting & Mineral Efflorescence
 - Combats Floor Sweating
- Overnight Deliverable – No Red Label

STORAGE:

Indoors between 50°F (10°C) to 100°F (37.7°C)

APPLICATION TEMPERATURE:

Ambient = 55°F (12°C) to 100°F (37.7°C)

Substrate = 45°F (7.2°C) and 110°F (43.3°C)

SHELF LIFE:

Original, Unopened Containers = 12 Months

Opened Containers = 2 months

AVAILABLE UNIT SIZES:

1 Gallon Jug – SCS-DEN-LP-128

5 Gallon Pail – SCS-DEN-LP-640

50 Gallon Drum – SCS-DEN-LP-6400

*Totes available special order

APPROXIMATE COVERAGE:

Coverage will vary depending on the floor profile, surface texture, absorbency of the substrate, etc.

Yield per square foot	400 to 800 sq.ft./gallon
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POT-LIFE & TRAFFIC TIMES (72°F / 50% Relative Humidity):

*Cure time is effected by temperature and humidity.

Pot-Life	Infinite
Working Time	30 minutes
Cured	18 to 24 hours

PROPERTIES (DRY):

PROPERTY	TEST METHOD	RESULTS
Adhesion to Concrete	ASTM D4541	Concrete Fails
Color		Clear to Cloudy White
Flash Point		Not Applicable
Freeze Point		32°F (0°C)
Odor		Nil to Musty
pH		±11.5%
Viscosity – Mixed	ASTM D2196	1 cP
Volume Solids	ASTM D2196	10% ±2%
VOC's	ASTM D3960	Zero (0) g/L
Weight per Gallon		±9 lbs.

NECESSARY TOOLS and EQUIPMENT:

- Paint Stick for stirring liquid
- Preparation and/or cleaning equipment (*see page 2)
- Sprayer (i.e. pump or airless)
- 5 gallon Plastic Buckets
- Microfiber mops
- Soft Bristle exploded tip Nylon push broom
- Potable Water for clean-up

LIMITATIONS:

- For Concrete Substrates ONLY
- Concrete MUST absorb water – Always test substrate absorption prior to using Smith's Densifier LP
- Existing concrete must be thoroughly cleaned to remove soils, sealers, coatings/paints, oils, grease, silicone, & any other impediment that would limit absorption into the concrete *See preparation section for detailed instructions
- Silicate-based compounds are NOT recommended for use prior to resinous floor coatings. Smith Paint Products recommends the use of [Smith's Epoxy MAC100](#) or [Smith's Epoxy MAC125](#), in conjunction with proper testing and mechanical preparation, to permeability and reduce the moisture vapor emission rate to a level within the tolerance of subsequent coatings and traditional floor covering needs



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PRECAUTIONS / WARNING:

- ❖ Use with adequate ventilation when applying
- ❖ Protect anything not intended to be treated with Smith's Densifier LP from splash or overspray using protective sheets such as Polyethylene
- ❖ Do NOT Apply to non-porous surfaces or frozen concrete
- ❖ Do NOT Apply to concrete with standing water puddles

PERSONAL PROTECTION EQUIPMENT RECOMMENDED:

- ❖ Wear Chemical Resistant Gloves – Avoid all contact with skin
- ❖ Wear Chemical Resistant Eye Protection – Prevent contact with eyes



INSPECT THE SUBSTRATE: Ensure the substrate is absorbent, structurally sound and solid as well as free of any contaminants that may impede absorption, such as oil, paint, curing compounds, wax, silicone, etc. Cosmetic repairs to concrete may occur after Smith's Densifier LP has cured for 24 hours and the surface is properly prepared to receive the repair product.

Surface preparation is the most important phase of a successful application. The more detail and time dedicated to preparation will dramatically affect the appearance as well as maximizes the product longevity and creates the best environment for an aesthetically pleasing installation.

TEMPERATURE and HUMIDITY: Substrate temperature and materials must be maintained between 45°F (7.2°C) and 110°F (43.3°C) for 24 hours prior to and 24 hours after installation.

CONTAMINATION OF SUBSTRATE: Concrete is porous and can become contaminated with oils, chemical from spills, etc. which may impede absorption. Determine if an impediment exists and a proper course of remediation. Follow local regulations regarding contaminant and disposal.

WATER ABSORPTION: Always check the surface absorbency with a light water spray. A uniformly dampened, darkening of the concrete surface should occur for the treatment of Smith's Densifier LP to be effective. Otherwise, the must be prepared via mechanical means or cleaned with an appropriate preparation cleaner, such as:

- Dirt = [Smith's Neutral Detergent](#)
- Dissipative Curing Compounds = Mechanical preparation followed by [Smith's Green Clean Pro](#) treatment
- Minerals = [Smith's CT-8](#)
- Oils/Grease = [Smith's Oil Clean](#)

(click links above for more details available on www.smithpaints.com)

SUBSTRATE PREPARATION: All surrounding areas and surfaces which are not intended to be treated with Smith's Densifier LP must be covered to protect against accidental overspray and/or damage. Substrate must be sound, solid, clean, free of sealer, bond breakers and able to readily absorb Smith's Densifier LP.

NEW CONCRETE – Surface must be thoroughly clean, dry and absorbent as well as strong enough to accept traffic and application of Smith's Densifier LP. Ensure substrate absorbs water, if not, clean with [Smith's CT-8](#) using an auto-scrubber ensuring a thorough clean water rinse or mechanically profile to a minimum of a CSP 2.

MECHANICAL SUBSTRATE PREPARATION: Always test to determine the suitability of an existing substrate and mock-ups are highly encouraged. Painted, sealed, curing compounds or otherwise previously coated substrates will require mechanical preparation to remove the film.

- **Diamond Grind:** For removal of existing thin-mil coatings, paints, sealers, etc.
 - Use 16 to 80 grit metal bond diamonds with an appropriate industrial, weighted head floor grinder to thoroughly remove the concrete surface until uniformly white. PCD's should be used to remove adhesives and heavy coating/paint build up followed by metal bond diamond grinding to remove scars. When polishing, continue processing to the desired sheen
- **Steel Shot Blast (Shot size S-230 to S-330 grit recommended):** Ideal preparation to remove curing compounds, etc.
 - Uniformly profile and clean concrete substrates overlapping each pass until white, clean concrete exists. Use magnetic broom to remove excess shot, sweep to remove large debris and vacuum to remove fine dust
 - *Avoid stationary blasting as micro-cracking the concrete surface may potentially causing future coating delamination*
- **Scarify / Planer / Concrete Shaver:** Heavy surface removal of weak surfaces, mortar beds, epoxy mortars, irregular surface elevations, etc.
 - Sweep to remove large debris & vacuum to remove fine dust. Scarify to uniformly remove the concrete surface until white. Thoroughly vacuum all dust / debris. Ideal preparation method for weak concrete surfaces, previously coated floors, adhesive residues or removal of high build applications such as concrete overlays or repair mortars

MIXING: Smith's Densifier LP is ready-to-use, DO NOT DILUTE. Shake container or stir with a paint stick for 20 to 30 seconds to blend as separation may occur during shipping. Pour blended product through a paint strainer into a sprayer for application.

APPLICATION: Apply Smith's Densifier LP onto intended application area with a pump up sprayer utilizing a circular motion. Distribute material evenly with a soft bristle push broom or microfiber pad to message into the concrete ensuring no puddles remain. Re-apply material as needed in areas where initial application has absorbed quickly. Material should be applied until substrate is no longer absorbent. Continue to manipulate applied material with push broom or microfiber pad for 15 to 20 minutes. Do not allow to puddle. Allow product to dry before polishing and/or burnishing.

For dyes, see [Smith's Liquid Dye](#) application instructions for polishing procedure utilizing a dye for best practices.



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SEALER – Burnished Concrete or Dustproofing

- Clean as previously stated and allow to dry
- Spray Smith's Densifier LP using a low pressure sprayer to saturate the concrete wet without puddles
- Evenly spread using a micro fiber mop with 1/2" overlapping passes into the outer edge of the previous pass to ensure a continuous wet edge. Do not allow to dry out while spreading to avoid streaks or overlap marks. Scrubbing is not required
- Ensure surface remains wet for a minimum of 10 minutes
- Wait at least 1 hour for silicates to begin reacting with the Calcium Hydroxide
- Use a high speed burnisher with 800 grit diamond impregnated pads to burnish the concrete surface while removing any residual densifier from the surface
- **OPTIONAL SECOND COAT** – Reapply Smith's Densifier LP using a sprayer and microfiber mop as previously stated, allow to dry for 1 hour then use a high speed burnisher with a 1500 grit diamond impregnated pad to enhance the sheen and remove any residue

If the surface absorbed properly and is NOT slippery after 30 minutes, allow to cure overnight. Rinse the surface with potable water and agitate with a soft bristle exploded tip Nylon broom or an auto-scrubber with nylon brush head to remove any excess material from the surface.

COVERAGE: Approximately 400 to 800 sq.ft. per gallon.

MAINTENANCE: Regular cleaning, to include dust mopping, is crucial to maintain the appearance and to achieve the appropriate longevity of any floor. Cleaning cannot occur too often. Spills should be removed quickly. Avoid the use of Polypropylene or abrasive bristle (Tynex®) brushes as these are known to create scratch patterns and lower the sheen of the finish.

Proper maintenance will help to maximize your investment by removing particles that scratch and dull the appearance of a floor coating. The floor should be swept daily and scrubbed once per week or per month depending on the amount and type of soils present. Environments with oils or regulated by health departments will need a more strict cleaning regimen.

Immediately remove any acidic spills, such as pickle juice or Mustard, to avoid a stain or damaging the finish of the concrete. A guard, such as [Smith's Surface Guard](#), is recommended for polished concrete susceptible to these types of stains.

Tynex® is a registered trademark of E.I. du Pont de Nemours and Company.

DETERGENT: Always use the least aggressive detergent necessary to remove the residue. Typically, coated floors may only need a detergent scrub on a weekly or monthly basis depending on the environment. Daily dust mopping or water only mopping/scrubbing is highly recommended. Environments with exposure to foods, oils, chemicals, ink, etc. should be detergent scrubbed daily, possibly enough after every shift.

Caution: Do not drag or drop heavy objects across any floor, as scratching, gouging or chipping may occur to the concrete or the coating itself. This includes the tip of the forks on a forklift, nails protruding from a pallets, etc.

Rubber tires are prone to plasticizer migration, especially aviation tires and high performance car tires. Plasticizer will leave an amber, yellow-like stain. This can be more noticeable where aircraft or vehicles are stationary for longer period of time, more so in non-climate controlled environments such as aircraft hangars, metal buildings with high ceilings and soft compound high performance tires. To avoid plasticizer staining, use a piece of Plexiglas® or LEXAN® panels, cut a few inches in diameter larger than the tires that will rest on the panels, between the floor and the contact point of the tire when storing rubber tired vehicles on any floor, including floor coating systems. Citric based degreasers will help to remove plasticizer residues from a coating surface and reduce staining risk if used before a stain sets in.

Avoid spinning tires on the surface of a coated floor. The heat created from the friction of a spinning tire will quickly soften the coating causing permanent damage to the finish.

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LIMITED LIABILITY: Liability is limited to replacement of defectively manufactured product of the same type and cost of the originally purchased product upon presentation of a valid, fully paid invoice at the time of a claim. No warranty shall be granted for outstanding invoices or for accounts with unpaid balances until paid in full. No damages, whether consequential, liquidated or other, shall be provided under this Limitation of Liability and Limited Warranty. Should a product defect be suspected at the time of application, cease use of the product immediately and notify Smith Paint Products for investigation as you will be responsible for the cost to repair or replace any work performed with product(s) suspected of defect. Record batch codes and save all products you purchased in order for any warranty to occur allow with the invoice that matches said quantity. Defects determined after installation must be reported to Smith Paint Products within 10 business days of discovery.

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