Smith's

Product Data Sheet

POLYURETHANE SEALER/PRIMER

Poly-SEAL

PolySEAL-PDS-121222

READY-TO-USE, WATERBORNE CROSS-LINKING POLYURETHANE / ACRYLIC SEALER

DESCRIPTION: Smith's Poly-SEAL is a single component, fast drying, waterborne polyurethane polymer fused with a cross-linking acrylic which achieves a tenacious bond to approved substrates. Combines the hardness of acrylic with the resilience of polyurethane resulting in a water impermeable protective film with exceptional abrasion/wear resistance, U.V. Stability and longevity.

Smith's Poly-SEAL Gloss may be used as a primer for interior / exterior direct-to-concrete applications prior to *Smith's Poly-WB* topcoat or as a seal coat to lock down Vinyl Chip prior to *Smith's Poly-WB*, *Smith's Polyaspartic 1000* , *Smith's Polyaspartic 2000* or *Smith's Polyaspartic 5000* for residential garage floor systems.

Smith's Poly-SEAL may be used as a standalone architectural and decorative concrete sealer for Concrete Overlays, Stucco, Pavers, Rockscapes, under water applications as well as a finish over Terrazzo as a replacement for traditional floor wax.

RECOMMENDED USES:

- Primer for:
  - *Smith's Poly-WB* (Poly-SEAL Gloss ONLY over bare concrete)
- Seal Coat prior to *Smith's Polyaspartic's* or *Smith's Poly-WB* for:
  - Vinyl Chip Systems (Residential Garage floors only)
- Terrazzo Sealer*
- Rockscapes & porous Natural Stone
- Bonds to:
  - Concrete, Stucco & Polymer Modified Overlays
  - Pavers
  - Concrete Stains & Dyes (i.e. *Smith's Color Floor* & *Smith's Liquid Dye*)
  - Terrazzo (Cementitious & Epoxy)
  - Vinyl Chip (Neat, unsealed prior to topcoat of *Smith's Poly-WB* or *Polyaspartic*)

HIGHLIGHTS:

- Ready-to-Use
- Alkali-Resistant & Water Submersible after 24-hour cure
- Does not enhance nor darken color of substrate
- Fast Air Drying
- Tenacious Bond to a Variety of Surfaces
- Low Odor & Low VOC's
- Infinite inter-coat adhesion
- Non-Chalking & U.V. Stable (Non-Yellowing)
- Good Blush Resistance
- Resists to Hot Tire Pickup (Residential Traffic only)

STORAGE: Indoors between 40°F (4.5°C) to 90°F (32.2°C)

SUBSTRATE SURFACE TEMPERATURE: 50°F (10°C) to 100°F (37.8°C) with 20% to 90% Ambient Relative Humidity

**Substrate temperatures between 50°F to 65°F will significantly slow the cure rate.*
***Do NOT apply in direct sunlight*
****Turn off in-floor radiant heat 1 hour prior to and for 24 hours after application*

SHELF LIFE: 1 Year in original, unopened container

AVAILABLE SIZES:

	Gloss	***Low Sheen***
1 Gallon Jug	SCS-POLYSEAL-1gal	SCS-POLYSEAL-LS-1gal
5 Gallon Pail	SCS-POLYSEAL-5gal	SCS-POLYSEAL-LS-5gal

**Drums & Totes available special order*

COLORS: Clear, Gloss or Low Sheen
– *Smith's WSC solid color packs available separately*

CURE TIMES (72°F / 50% Relative Ambient Humidity):
**Cure time is affected by temperature and humidity.*

Pot-Life	N/A
Tack Free	15 to 30 minutes
Recoat (for Smith's Poly-WB)	As soon as 15 to 30 min.
Foot Traffic	60 to 90 minutes
Heavy Traffic	24 hours
Full Cure	24 hours

CURED COATING PROPERTIES (DRY FILM):

Property	Test Method	Results
Abrasion Resistance *mg/loss* *Taber Abraser	ASTM D4060	Gloss = 69 mg Low Sheen = 65 mg
Adhesion to Concrete	ASTM D4541	Concrete Fails
Flash Point		>212°F (100°C)
Gloss	60 degree	Gloss = 70 (±5) Low Sheen = 20 (±5)
Viscosity (Mixed)	ASTM 2196	25 cP
Volatile Organic Compounds (VOC'S)	ASTM D3960	99 g/L
Volume Solids (Mixed)	ASTM D2196	25%

APPROXIMATE COVERAGE (DRY FILM):
Coverage will vary depending on the application thickness, floor profile and absorbency of the substrate.

Application	Approximate Yield *per unit per square foot*	
	1 gal jug	5 gal pail
Direct-to-concrete (Gloss)	225 to 275 sq.ft.	1,125 to 1,375 sq.ft.
Sealer (Second Coat)	250 to 300 sq.ft.	1,250 to 1,500 sq.ft
Terrazzo (using microfiber mop)	600 to 1,000 sq.ft. (2 Coats minimum)	3,000 to 5,000 sq.ft. (2 Coats minimum)
Vinyl Chip (seal coat over bare Vinyl Chip)	200 to 250 sq.ft.	1,000 to 1,250 sq.ft.

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Typical Chemical & Stain Resistance

Covered Spot Test - 3 mil film at 7 day cure:

***E** - Excellent; **G** - Good (slight sign of exposure, coating recovers);*

***NR** - Not Recommended (Permanent Damage)*

ACIDS	4 hour	24 hour
Acetic Acid 25% (Vinegar)	E	G
Citric Acid 10%	E	E
Lactic Acid 88%	G	G
Phosphoric Acid 85%	NR	NR
Sulfuric Acid 25% (Battery Acid)	NR	NR
Sulfuric Acid 98%	NR	NR
Hydrochloric Acid 32% (Muriatic)	NR	NR
Nitric Acid 67%	NR	NR
BASES		
Ammonium Hydroxide 10%	NR	NR
Sodium Chloride 20%	NR	NR
Sodium Hydroxide 50%	NR	NR
Sodium Hypochlorite (Bleach)	NR	NR
Trisodium Phosphate 10%	G	NR
ALCOHOLS		
Ethylene Glycol (Antifreeze)	E	G
Isopropyl Alcohol 91%	G	NR
Methanol	E	G
Hand Sanitizer (Purell®)	G	NR
SOLVENTS		
Acetone	NR	NR
d-Limonene	E	G
MEK	NR	NR
Methylene Chloride	NR	NR
Mineral Spirits	E	G
PGMEA	G	NR
HYDROCARBONS		
Brake Fluid	G	NR
Transmission Fluid	E	G
Motor Oil	E	E
Kerosene	E	G
Gasoline	E	G
Hydraulic Fluid	E	NR
Skydrol® – LD-4	NR	NR
MISCELLANEOUS		
Coffee	E	E
Coke®	E	E
Dish Detergent (Dawn®)	E	E
Hydrogen Peroxide 3%	G	NR
Ketchup	E	E
Monster Energy® Drink	E	E
Mustard	E	G
Tide® 1%	E	E
Windex® (Ammonia Based)	G	NR
Wine – Red	E	G

Coke® is a registered trademark of Coca-Cola. Monster Energy® is a registered trademark of Monster Energy Co. Skydrol® is a registered trademark of Eastman Chemical. Dawn® & Tide® are registered trademarks of Proctor & Gamble. Windex® is a registered trademark of S.C. Johnson & Son, Inc. Purell® is a registered trademark of Gojo Industries.

LIMITATIONS:

- Do NOT Use on non-porous surfaces, such as Ceramic or Porcelain tiles, Marble, Granite, etc.
  - o *Specifier & user shall determine suitability & assume all responsibilities therewith*
- When applying solvent-based topcoats/sealers over Smith's Poly-SEAL, apply an overnight cure to ensure all cross-linking occurs prior to solvent exposure
- Avoid exposing freshly applied Smith's Poly-SEAL to air movement, direct sunlight, freezing, water & direct sources of heat
  - o *Turn off radiant in-floor heat 1 hour prior to and for 24 hours after application*
- For exterior, immersion, & wheeled traffic conditions, a minimum of an ICRI CSP 2 profile is required for mechanical preparation
- NOT intended for use as a wood floor sealer

LIMITATIONS (cont.):

- Not compatible with Smith's Hi-Wear 90S, Smith's CRU'86, Smith's MCU-60 or Smith's Poly 2K-90 topcoats
- NOT for use in kitchen environments at risk of thermal shock
- *DO NOT USE* MURIATIC/HYDROCLORIC ACID TO PREPARE CONCRETE AS CHLORIDE CONTAMINATION MAY OCCUR
- When etching, ensure all *Smith's Green Clean Pro* has been thoroughly removed with potable water with no remaining soapy residue or cement slurry
- *DO NOT USE* on *"Green"* concrete *(less than 30 days old), Hard Trowel Finished* concrete or *previously sealed/coated/painted concrete* to including any type of curing compound
- *Smith's Green Clean Pro* is ONLY *recommended for preparing fully cured, aged, raw/bare concrete which has NOT been previously sealed as preparation for stained concrete applications or basic sealing applications*
- *NOT intended as a primer or final wear surface for Vinyl Chip coating system applications or to prepare hard trowel concrete finishes*

TEMPERATURE and HUMIDITY:

Substrate temperature, air and materials must be maintained between 50°F (10°C) to 100°F (37.8°C) with less than 90% Ambient Humidity during application.

- DO NOT INSTALL when the Dew Point is within ±5° of the air temperature

INSPECT THE SUBSTRATE:

Ensure substrate is sound/solid, free of any contaminants that may act as a bond breaker, such as oil/grease, loose paint/coatings, wax, silicone, etc.

CHECK FOR MOISTURE:

Exterior Concrete - concrete must dry and new concrete must cure for at least 10 to 14 days to allow all bleed water/water of convenience to escape and for concrete to harden enough to allow appropriate preparation for the system desired. Follow the moisture recommendations for the full system intended.

Interior Substrates - Testing of moisture vapor transmission is required via Calcium Chloride (ASTM F1869) or In-situ Relative Humidity (ASTM F2170) methods to determine the Moisture Vapor Emission Rate (ASTM F1869) or the available Moisture Content (ASTM F2170) at the time of testing. Follow testing manufacturer's instructions precisely or visit www.astm.org, see ASTM F1869 or F2170, to purchase test methods. Testing MUST occur within an acclimated, interior environment for valid/conclusive results. Following the underlaying resinous system/layer requirements regarding moisture vapor transmission.

Smith Paint Products is strictly a product manufacturer and does NOT offer any testing or analysis but may be able to offer guidance to an appropriate testing lab or third-party inspector. When in doubt, hire a qualified third-party testing firm.

CONTAMINATION OF SUBSTRATE:

Concrete is porous and can become contaminated with oils, chemical from spills, etc. which act as a bond breaker. Determine if a potential bond breaker exists and a proper course of remediation. Contact Smith Paint Products for remedial recommendations while following local regulations regarding contaminant & disposal.

OIL CONTAMINATION:

Use *Smith's Oil Clean* to remove oil (i.e. petroleum, synthetic & food oils) from the surface of the concrete prior to mechanical preparation.

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NECESSARY TOOLS and EQUIPMENT:

- Plastic Sheeting or Ram Board to cover floor for mix station
- Paint stir stick
- Premium, Non-Shed Paint Roller Covers (Roller Size Varies based on application)
- Paint Roller Frame with Extension Pole
- Cleaning Solvent (Soap & Water While Wet)
- Masking Tape
- Microfiber mop or T-Bar (for sealing Terrazzo only)
- Pump Sprayer or HVLP Sprayer **SEE SPRAY APPLICATION SECTION FOR MORE DETAILS* (for exterior decorative concrete sealing)

SUBSTRATE PREPARATION:

NOTE: During application in environments using temporary heat, make sure to exhaust emissions and toxic fumes from temporary heaters to the exterior of the building to prevent health hazards and damage to work. Many temporary heating methods emit unburned petroleum into the air which act as a bond breaker once it falls onto the surface of the substrate

- Precautions must be taken when using LP, gasoline, diesel, etc. fueled temporary heat
- Always shut off temporary heat at least 2 to 3 hours prior to application of Smith's Poly-SEAL to reduce risk of airborne petroleum contamination
- Always clean the mechanically prepared surface with Smith's Oil Clean or TSP using an auto-scrubber followed by a thorough clean water rinse when temporary heat has been in use
- Fisheyes are a result of surface contamination & insufficient cleaning

Follow the preparation method recommended for the full system or high solids coating to be applied over Smith's Poly-SEAL.

Tape Test:

A tape test will help determine the effectiveness of the cleaning process. After the floor has been thoroughly scrubbed, rinsed and allowed to dry; apply several 1 foot strips of high quality 2" clear packaging tape to various locations on the floor. Aggressively press the tape onto the floor with the heel of your hand. Fold one end of the tape into itself and pull it off of the floor as vigorously as possible. Examine the adhesive layer in a bright light looking for residue that was pulled from the floor. Little to no dust or other foreign particles should be visible. Areas with visible foreign material need to be rinsed again until the surface is free of these contaminants.

APPLICATION METHOD:

Apply via brush, roller, pump up, HVLP or airless spray which vary based on intended usage.

AS AN INITIAL SEALER OVER VINYL CHIP:

After scraping and vacuuming off the loose Vinyl Chip from the base broadcast, use Smith's Poly-SEAL to touch-up any thin flake areas where too much color from the base is showing using a chip brush or a trim roller and lightly rebroadcast the repaired areas. Wait 15 to 20 minutes for the touch-up to cure then vacuum to remove and loose Vinyl Chips. Wait until no damp areas remain, typically another 15 minutes *(total of 30 minutes since touch-ups initiated at 72°F, longer for cooler temperatures)*.

Using the dip-and-roll method, apply Smith's Poly-SEAL using a 3/8" to 1/2" premium, non-shed paint rolling at a rate of 200 to 250 sq.ft. per gallon. Topcoating with Smith's Poly-WB may proceed when Smith's Poly-SEAL is dry with no whitish or tacky areas remaining on the entire surface.

When topcoating with solvent-based products, allow an overnight cure. *NOT COMPATIBLE with Smith's Hi-Wear 90S, Smith's CRU'86, Smith's MCU-60 or Smith's Poly 2K-90 topcoats.*

SEALING STAINED CONCRETE:

After allowing a full cure* (minimum 12 hours) time for Smith's Color Floor, Color Wall or Color Accents, remove all loose particulate utilizing a leaf blower. If standing water is present, remove excess water with a cloth or squeegee. Allow the substrate to dry before application of Smith's Poly-SEAL.

* High humidity and lower temperatures will lengthen cure time

DIRECT-TO-CONCRETE SEALING:

Achieve a ≥CSP 2 *(Concrete Surface Profile in accordance with ICRI Guideline 310.2R2013, as published by the International Concrete Repair Institute)* to yield a surface texture similar to 100 grit sandpaper or more course in order to maintain long term adhesion.

- *If topcoating with a high solids sealer or a high build coating system, follow the preparation method recommended for the system or high solids coating*
- Ensure all curing compounds have been thoroughly removed

Recommended preparation methods below:

- ***Diamond Grind*** - Diamond grind using metal bond diamonds with an appropriate industrial, weighted head floor grinder to thoroughly remove existing paints, sealers, etc. until a uniformly porous surface is attained (typically between 40 to 100 grit metal bond diamonds working up in grit as necessary to remove any swirls created preparing the concrete but not exceeding 120 grit – RESIN BOND DIAMONDS ARE NOT APPROPRIATE FOR PREPARATION)
- Smith's Green Clean Pro buffered etching compound may be used ONLY as follows: **click link for in-depth information*
  - o **As a Silicate/Densifier Remediation Method** AFTER one of the above-mentioned mechanical preparation methods
  - o **Preparation prior residential / light foot traffic** (exterior only) **for stains & sealer over aged exterior concrete**

1) Remove paint, adhesives & loose particulates from the intended application surface via mechanical preparation *(i.e. Diamond Grinding, Sandblasting, Shot-blasting, etc.)* or an appropriate paint stripper.
2) Liberally apply Smith's Green Clean Pro to a 20 foot x 20 foot section of the substrate with ½ inch nap roller cover
3) Allow Smith's Green Clean Pro to remain on the substrate for 20 to 30 minutes
4) Removal of Smith's Green Clean Pro:

FOR EXTERIOR SURFACES - Utilizing a 12,000 work units* pressure washer in conjunction with a 0° (ZERO) rotating nozzle to agitate & remove Smith's Green Clean Pro with overlapping line patterns flushing the substrate until the rinse water is clear

*Work Units = Gallons per minute x PSI

FOR INTERIOR SURFACES - Agitate Smith's Green Clean Pro utilizing a low-speed orbital floor buffer (small area) or an auto-scrubber (large area) with Mal-grit brush attachments while rinsing with clean water. Extract material utilizing a wet/dry vacuum or lower the squeegee uptake bar on the auto-scrubber. Continue to flush and agitate the substrate until the rinse water is clear

5) Allow surface to dry
6) Perform a "Tape Test" as stated in the left column

Should a greater profile be desired or additional cleaning is necessary, reapply Smith's Green Clean Pro following the previous directions

MIXING FOR SOLID COLOR:

Add 1 bottle of Smith's WSC colorant to every 1 gallon of Smith's Poly-SEAL. Mechanically mix for 2 to 3 minutes using a low-speed drill with a paint mixing paddle.

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ROLLER APPLICATION:

Apply Smith's Poly-SEAL at a rate of 225 to 275 sq.ft. per gallon using an appropriate nap non-shed roller for the concrete texture:

Suggested Roller Nap:	
Flat/Even Surfaces	1/4" to 3/8" Nap
Irregular Surfaces (Knockdown Overlays, Stucco)	3/8" to 1/2" Nap

Apply Smith's Poly-SEAL evenly across the surface and avoid puddling. Higher absorbency substrates may require 2 coats of primer to avoid pinholes in the final topcoat finish.

SPRAY APPLICATION:

A typical pump-up sprayer provides an easy, economical method of application. Spray on in a fine, fog pattern, without spurts or dribbles, to form a thin, continuous film. AVOID PUDDLING in low areas. If puddles occur, brush or roll them out. For added protection and a greater sheen on concrete, we recommend two coats of Smith's Poly-SEAL. Additional coats may be applied after the first coat has thoroughly dried.

TERRAZZO SEALER:

Thoroughly strip all floor finish/wax down to bare Terrazzo surface using a floor stripper and black pad attached to a low-speed floor machine. Once floor has been thoroughly stripped of floor finish, scrub the entire floor surface to be sealed with *Smith's Neutral Detergent* or similar and follow with a clean water rinse continuing until all soap suds are completely removed. Allow to dry overnight or use blower fans to force dry the surface.

Using a microfiber mop, apply a thin coat of Smith's Poly-SEAL at a rate of 600 to 1,000 sq.ft. per gallon and allow to dry for 2 hours then repeat. If a higher gloss is desired, burnish the treated area with high-speed buffer in conjunction with a white pad after the second application has cured for no less than 12 hours.

COVERAGE:

*See chart on page 1 of this document.

SLIP RESISTANCE:

Smith Paint Products recommends the use of angular slip-resistant aggregate in all coatings that may be exposed to wet, oily or greasy conditions as well as any condition where increased traction may be necessary. It is the contractor and end users' responsibility to determine the appropriate traction needs and footwear necessary for the conditions as well as setting performance parameters prior to beginning the application, testing to determine parameters have been met upon completion to achieve the end users documented safety standards.

Mock-ups are highly recommended as part of the evaluation process to determine the appropriate amount of slip-coefficient necessary for the environment as well as consulting with a third-party testing firm for in-situ slip co-efficient of friction testing.

CLEAN-UP:

Clean up tools with dish detergent and water while wet. Freshly cured Smith's Poly-SEAL may be removed using solvent such as Acetone, Toluene, MEK or Xylene.

MAINTENANCE:

The coating system must be allowed to cure for no less than one week before using any mechanical cleaning equipment on the surface and no less than 3 days before neutral cleaner. This includes auto-scrubbers, swing buffers, sweepers, etc. Only dust and wet mopping may occur the first week.

Dust mopping, removal of debris and regular cleaning is crucial to maintaining the aesthetics of the coating and obtaining the maximum life span of the floor coating system. Cleaning cannot occur too often and inefficient cleaning will cause the floor to wear out prematurely and possibly stain or discolor depending on what comes in contact with the floor. Spills should be removed quickly. *Avoid the use of Polypropylene or abrasive bristle* (Tynex®) brushes as these brushes will cause the development of scratch patterns and lessen the sheen.

To maximum your investment with proper floor care and maintenance, remove all particles that may scratch and/or dull the floor coating using the least aggressive method necessary to clean the floor.

- Daily = Sweep and dust mop or water only mopping/auto-scrubbing; spot clean spills and oils
- Weekly or Monthly = Scrubbed once per week or month depending on the amount and type of soils present

DETERGENT:

Always use the least aggressive detergent necessary to remove the residue. *Smith's Neutral Detergent*, or similar, may be used for general purpose cleaning. Use *Smith's Oil Clean*, or similar degreaser, for more degreasing and heavy duty weekly or monthly cleaning.

Caution - Do not drop or drag heavy objects across any floor, including coatings 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 pallet, etc.

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

Should a gouge, chip or scratch occur, touch-up the damaged areas immediately to avoid chemical or water intrusion to the concrete which could create additional damage. A thin layer of clear nail polish to the damaged area will provide some minimal protection until the area can be properly repaired.

Rubber tires are prone to plasticizer migration, especially soft compound and high-performance tires. Plasticizer will stain coating and commercial flooring leaving an amber, yellow-like stain that can be permanent. This can be more noticeable where vehicles are stationary for longer period of time, more so in non-climate-controlled environments with lighter colored floors. Some tire stains can be removed if cleaned before a set-in stain occurs using a d-Limonene based degreaser and some mild agitation using an orbital, low speed floor machine.

LIMITED LIABILITY:

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