

Smith's

Product Data Sheet & Application Guide

POLYURETHANE

SKM-PDS-100821

SKM

FAST-SETTING, 2-COMPONENT 100% SOLIDS POLYURETHANE LIGHT GRAY SKIM-COAT / PATCH

DESCRIPTION: Smith's SKM is a 2-Component, Fast Setting, Moisture Tolerant, 100% Solids Polyurethane Light Gray Skim-Coat and Patching compound with good elongation to aid in suppressing minor cracks from telegraphing through yet rigid enough for traditional substrate surface repairs. Walkable in roughly 2 ½ hours to accept subsequent layers/systems as well as sanding with an orbital floor machine. Smith's SKM contains no sand, applies from a feather edge (0") to 5" in a single lift and may be extended with an appropriate dry aggregate such as pea stone or quartz sand if desired in deeper fill applications. Sold as a light grey but may be tinted with Smith's ISC Industrial Solid Color Packs (*white is not attainable with Smith's SKM*).

For use interior or exterior under most resinous coatings or polymer modified cementitious overlays, including but not limited to Smith's CPR products in thermal shock environments.

RECOMMENDED USES:

- Skim-coating Chips, Gouges, Spalls, Pop-outs, Voids & Cracks (static, non-moving)
 - Apply Feather Edge (0") to 5" neat (Any depth w/ aggregate extension)
- Above, On or Below Grade Applications
- Rebuilding Control Joint sidewalls
- For Interior & Exterior applications
- May be used for repairs & patching prior to [Smith's Epoxy MAC100](#) or [Smith's Epoxy MAC125](#) (surface must be diamond ground prior to applying Smith's MAC products over Smith's SKM)
- Bonds to:
 - Ceramic, Porcelain, Stone & Quarry Tiles
 - Coatings (Epoxy, Cementitious Urethane, Methyl Methacrylate, Novalac, Polyaspartic, Polyurethane, & Vinyl Ester)
 - Concrete & Polymer Modified Overlays
 - Metal Floors (Stainless Steel, Iron, Steel, Copper, Treated Aluminum*)
 - Terrazzo
 - Tennis Courts (Concrete & sound/solid Asphalt)
 - Wood Subfloors (underlayment grade plywood or OSB)

HIGHLIGHTS:

- Fast Return-to-Service
 - Sand = Typically 2 ½ to 3 hours @ 72°F / 50% Humidity
 - Accepts subsequent layer once hard set
 - Accepts Heavy Forklift Traffic overnight
- Highly Chemical Resistant
- High Strength and Flexibility
 - Good Impact Resistance & Load Transfer
 - Reduces Shear Stress at bond line
 - Resists Aging & Elasticity Fatigue
- Tenacious Bond to a variety of substrates
 - Self-Priming over most substrates (Prime highly absorbent substrates)
- High Solids Content – Low VOC's
- Performs well in areas of regular water exposure or submersion

STORAGE: Indoors between 50°F (10°C) to 85°F (29.4°C)

SUBSTRATE TEMPERATURE: 50°F (10°C) to 90°F (32°C)

**Lower temperatures & ambient humidity will significantly extend the cure time*

SHELF LIFE: 1 Year in original, unopened containers. Once open, 30 days

AVAILABLE KIT SIZES: SDS-SKM-080KIT 80 ounce kit

CURE TIMES (@ 50% Ambient Humidity):

**Cure time is affected by temperature & humidity*

	55°F	72°F	90°F
Pot-Life	30 min.	12 to 15 min.	7 to 10 min.
Working Time	35 to 40 min.	15 to 20 min.	12 to 15 min.
Shave / Razor Scrape	≥90 min.	40 to 45 min.	30 to 35 min.
Tack-Free	4 to 5 hrs	80 to 90 min.	1 to 1½ hrs
Diamond Grind @ <5 mils (thicker applications require longer cure)	8 to 12 hrs	2½ to 3½ hrs	1½ to 2½ hrs
Foot Traffic	12 to 14 hrs	4 to 6 hrs	2 to 4 hrs
Heavy Traffic (i.e. parked vehicles, forklifts, pallet jacks etc.)	36 to 40 hrs	14 to 18 hrs	12 to 14 hrs
Full Chemical Resistance	7 days	6 days	5 days

CURED COATING PROPERTIES (DRY FILM):

Property	Test Method	Results
Compressive Strength, psi (MPa)	ASTM C109M	≥12,475 psi (≥86 MPa)
Shear Stress, psi (MPa)	ASTM D790	680 psi (4.68 MPa)
Elongation at break (cured for 7 days at 72°F)	ASTM D732	30%
Conical Mandrel – Resistance to Cracking	ASTM D522	Pass
Hardness – Shore D	ASTM D2240	67 (±5) neat
Tear Resistance, pound-force foot (Torque)	ASTM D1004	20,430 lbf. ft. (27.7 kN m)
Flammability	ASTM E648	Class 1 (Self Extinguishing)
Adhesion to Concrete – Pull Strength, psi (MPa)	ASTM D4541	PASS - Concrete Fails
Adhesion to Steel – Pull Strength, psi (MPa)	ASTM D4541	2,175 psi (15.0 MPa)
Viscosity – Mixed	ASTM 2196	5,800 cP
VOC's	ASTM D3960	10 g/L
Volume Solids (Mixed)	ASTM D2196	100%
Mix Ratio by Volume		4A to 1B
Color		Light Gray

APPROXIMATE COVERAGE (Full 80 oz. kit):

Skim-Coating – coverage varies depending on the porosity & size of the pits. Typically, 1 kit (80 oz.) should yield 150 to 180 sq.ft. when applied as a skim-coat using a finish trowel over mild textured surfaces.

Deep Fill Patching – coverage varies depending on the porosity & size of the pits. 80 oz. yields 0.0835 cubic feet or 144 cubic inches

LIMITATIONS:

- **NOT U.V. Stable** – Finish may chalk or darken with Ultra Violet Light exposure
- **RECUT TO HONOR MOVING JOINTS** – After repairing/rebuilding joint walls, recut joint to the appropriate width & depth then fill the joint with an appropriate joint filler for the type of joint (i.e. *Control or Construction Joints* = [Smith's Poly JF](#))
- Avoid exposing freshly applied Smith's SKM to air movement, direct sunlight, freezing, water & direct sources of heat (i.e. *radiant in-floor heat*)
- For industrial & wheeled traffic/fork lift traffic conditions, a minimum of an ICRI CSP 3 profile is required for mechanical preparation
- **NOT A STAND-ALONE WEAR SURFACE**, for patching / repairs only



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PRECAUTION – TEMPORARY HEATING EQUIPMENT:

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. Non-electric temporary heating equipment may 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 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 used
- Fisheyes are the result of surface contamination

NECESSARY TOOLS & EQUIPMENT:

- Paint mixing paddle attached to a 1/2" Variable Speed Drill (≤450 RPM)
- Measuring vessels (for equal volume measurement)
- Dry Sand for bottom of open cracks and deeper patching
- Joint Saw or angle grinder to chase cracks
- Chipping Hammer with chisel tip
- Vacuum Shroud Edge Grinder with segmented diamond cup wheel to grind flush to surrounding surface elevations
- HEPA Filter Vacuum with >200 CFM with hose
- Extension Cords
- 4" Wide Razor Scraper
- Tool for Finishing (i.e. Finishing Trowel, Flex Blue Steel Blade/12" or wider Drywall Joint Tape Knife, Magic Trowel, Plastic Finish Trowel, Flat Blade Squeegee, Putty Knife or similar)
- Measuring Cups (For Part Mixing Applications)
- Tape (Masking Tape or Stucco Tape)
- Cleaning Solvent (Acetone, MEK or Xylene)

PERSONAL PROTECTION EQUIPMENT RECOMMENDED:

*SEE SDS



- Individuals with Allergies, Asthma, Respiratory Problems or Sensitive to Solvents should wear self-contained respiratory equipment (TC 19C NIOSH/MESA)
- 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 sound and solid as well as free of any contaminants that may act as a bond breaker, such as oil/grease, loose paint, wax, silicone, etc.

CHECK FOR MOISTURE: Follow moisture guidelines for the finished product(s) or system(s) to be applied over Smith's SKM. When applying a moisture sensitive finish over Smith's SKM, test concrete for moisture vapor transmission via the Calcium Chloride (ASTM F1869) and In-situ Relative Humidity (ASTM F2170) methods.

Smith's SKM may be used for minor repairs, patching and crack filling prior to priming with [Smith's Epoxy MAC100](#) or [Smith's Epoxy MAC125](#) for moisture vapor emission remediation applications with less than 97% RH and ≤18 lbs. CaCl.

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.

SUBSTRATE CONTAMINATION: Determine if a potential bond breaker (i.e. oil/grease, silicone, wax, chemicals from spills, etc.) in the substrate exists and a proper course of remediation. Contact Smith Paint Products for remedial recommendations while following local regulations regarding contaminant and disposal.

Oil Contamination – Use [Smith's Oil Clean](#) to remove oils, (i.e. petroleum, synthetic and food oils) from the surface of the concrete prior to mechanical preparation. See [Smith's Epoxy MAC125](#) product data sheet for details regarding oil saturated concrete encapsulation.

SUBSTRATE PREPARATION: Carefully read and understand the following directions before beginning project. These directions are general guidelines only and are NOT meant to cover every application or environment. Should any remaining questions or concerns exist after thoroughly reviewing these instructions, please call Smith's for technical assistance at 800-466-8781 or refer to ICRI Guideline 310.2R2013 for more in-depth preparation details and recommendations.

MECHANICAL PROFILE: Achieve a CSP 3 to 6 (Concrete Surface Profile in accordance with ICRI Guideline 310.2R2013, as published by the International Concrete Repair Institute) yielding a surface texture similar to 80 grit sand paper or more course in order to maintain long term adhesion to the substrate.

Recommended preparation methods below:

- **Diamond Grind** – Use 16 to 25 grit metal bond diamonds or Roller Bush Hammer heads (on concrete substrates only) with an appropriate industrial, weighted head planetary floor grinder to thoroughly profile and remove the substrates surface until uniformly dull. Ideal preparation method for application of Smith's SKM over solid, well-bonded existing coatings or ceramic tile systems over concrete if the final layer is intended to be a high solids floor coating system. NOT recommended over tile over wooden substrates
- **Steel Shot Blast (Shot size S-230 to S-330 grit recommended)** – 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** – Sweep to remove large debris and vacuum to remove fine dust. Scarify to uniformly remove the concrete surface until white. Thoroughly vacuum all dust and debris. Ideal preparation method for weak concrete surfaces, previously coated floors, adhesive residues or thick build applications greater than 1/2" average thickness
- ***Silica Contaminate Removal** – [Smith's Green Clean Pro](#) buffered acidic etching compound may be used ONLY as a remediation method for removing densifiers/silicates AFTER one of the above mentioned mechanical preparation methods

NOTE:

- DO NOT USE MURIATIC / HYDROCHLORIC ACID to prepare concrete to avoid Chloride Contamination
- 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

Key in all termination points using a diamond cutting blade prior to any above preparation method.



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REPAIRS TO EXISTING FLOOR COATING SYSTEMS:

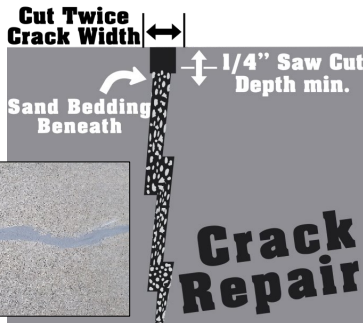
Adhesion to any existing coating system is only as good as the adhesion the existing coating system has to its substrate. Always test to determine the suitability of an existing substrate and mock-ups are highly encouraged. Allow the mock-up to cure for no less than 1 week before performing adhesion testing, such as a tape test or using an Elcometer. When in doubt, remove the existing coating or tile down to a sound, solid concrete substrate.

To verify the existing coatings bond strength to its substrate, follow ASTM D4541 using an Elcometer to determine an in-situ direct tensile pull-off strength greater than 250 psi (1.7 MPa) to pass the test.

Clean to remove any bond breakers (i.e. oils, silicone, paint, debris, dust, etc.) then mechanically grind or sand the entire surface to be coated to a uniformly dull, "white" finish with no shiny areas then vacuum to remove the heavy dust/debris followed by solvent tack ragging using a Micro-fiber mop with Acetone. Allow to dry for no less than 30 minutes prior to applying Smith's SKM.

Filling Cracks in New Concrete – ACI recommends new concrete slabs cure for a minimum of 60 to 90 days or longer at 70°F to allow the slab to shrink. Filling cracks in a new concrete pour prior to the ACI recommended cure time may cause new cracks to develop within ½" to either side of the original crack as the slab continues to shrink while the concrete cures.

Cracks – Saw cut to clean out any loose debris, dust or foreign contaminants, vacuum thoroughly then fill with sand ¼" to ½" below surface prior to infilling with Smith's SKM:



Patching & Repairs – Saw cut perimeter, chip out loose debris using a needle scaler or chipping hammer, thoroughly vacuum to remove dust/debris, then infill with Smith's SKM as needed:



Chips / Spalls / Gouges – Chip out loose debris and mechanically prepare the substrate to ensure proper adhesion. Thoroughly vacuum to remove dust/debris, then trowel apply Smith's SKM with a finishing trowel as necessary:



Wooden Substrates – Abrade the surface, both new or existing, of approved wooden substrates using an appropriate wood floor sander to clean as well as remove existing sealers, paints, wax, etc. until the wood surface is thoroughly clean and absorbent. Vacuum the entire surface as well as the joints between boards to remove all sanding dust and debris prior to skim-coating tightly butted seams. Larger seams and/or penetrations around pipes or wires should be filled in accordance with fire codes.

***DO NOT INSTALL over oil contaminated, dry-rotten, insect damaged or unsound wooden substrates.**

Non-Porous Substrates – Non-porous substrates which are sound and solidly bonding with no hollow areas nor delamination can accept Smith's SKM once the substrate is sufficiently clean and free of any prior wax/floor finishes, sealers, paint, dirt, debris, grease/oil, or other bond breakers. Non-porous substrates includes but not limited to Ceramic / Porcelain / Quarry / Clinker / Granite / Marble Tile, Terrazzo, high solids Resinous Floor Coatings (i.e. Epoxy, Cementitious Urethane, Methyl Methacrylate, Novalac, Polyaspartic, Polyurethane, Polyurea, or Vinyl Ester). Please call Smith's Technical Department to discuss other substrates.

Mechanical preparation to dull and scuff the substrate is highly recommended for optimal adhesion. Wax/Floor Finish must be stripped, neutralized and rinsed thoroughly with water prior to mechanical preparation.

Recently installed cementitious compounds require additional cure times prior to coating with a high solids moisture cured product such as Smith's SKM (at 72°F / 50% Humidity):

- Polymer-Modified Portland Cement-based Leveler & Mortars >5,000 psi = 48 to 72 hours per ¼" average thickness
*Must be non-water soluble (i.e. interior & exterior rated)
- Calcium Alumina & CSA Cement-based Levelers & Mortars >5,000 psi = 24 hours per ¼" average thickness
*Must be non-water soluble (i.e. interior & exterior rated)
**Follow manufacturers recommended cure rate for moisture cured adhesives

Metal – Scrape off any stuck on debris. Remove all rust scale and paint via media blasting or wire brush as necessary. Metal may be mechanically or chemically etched to achieve a lightly profiled surface then cleaned with Acetone or Brake Parts Cleaner to remove any residue oils and contaminants

Wash surface with [Smith's Oil Clean](#) mixed 1:1 with warm, potable water, agitate with a nylon bristle brush paying close attention to grease build up then thoroughly rinse with warm, potable water, allow to dry then tack rag with Acetone prior to repairs or priming. Automotive Brake Parts Cleaner may be used for small, isolated metal cleaning prior to mechanical preparation. Once dry, proceed with application of Smith's SKM or treat with Smith's Flash Rust Inhibitor if unable to immediately coat.

CAUTION - Plastic Media, Dry Ice Blasting, Soda Blasting, etc. do not achieve enough of a surface profile and will require additional chemical etching to properly adhere the coating to the metal. Corrosive resistant primer may be necessary over Steel, Aluminum and Copper substrates prior to application of Smith's SKM.



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PRIMING: Smith's SKM is self-priming over most approved substrates after proper mechanical preparation. However, priming may be necessary for highly absorbent substrates as well as certain metal substrates prone to quick corrosion. When priming, ensure the primer has dried as directed by its product data sheet. Use the appropriate primer for the conditions and substrate type. See [Smith's Epoxy MAC125](#) data sheet regarding oil saturated concrete encapsulation. See [Smith's Flash Rust Inhibitor](#) and [Smith's DTM Primer](#) or [Smith's RST](#) data sheets for priming metal substrates.

Excessively Porous Substrates – Lightweight / Cinder Aggregate Concrete, Gypsum Decking & Underlayment, existing Tile Mortar Beds, Asphalt Paving / Tennis Courts, etc. must be completely dry, solidly bonded with no loose or hollow areas, sound, clean/free of any sealers/dirt/debris/oils/grease and double primed with [Smith's Epoxy FW38](#) prior to applying Smith's SKM.

PRECAUTION – Despite the fact Smith's SKM yields a dense, durable film once cured, this does not change the integrity of the substrate beneath the repairs. Therefore, it is the contractor's responsibility to determine whether a substrate is suitable and the contractor assumes all liability and risks associated when applying over a standard substrate such as Gypsum, Tile Mortar Beds & Screeds, Cinder Aggregate Concrete or any that are unsound, weak, poorly adhered. A mock-up of the complete coating or flooring system should be evaluated over the substrate to determine whether the substrate is suitable and can perform appropriately prior to making any decisions or proceeding with installation. Please contact Smith's Technical Services prior to installing over these surfaces.

MIXING: Only mix enough product that can be placed and finished within 7 to 10 minutes to allow a workable wet edge between batches. Warmer temperatures and high humidity will reduce working time.

Full Kit Mixing – Premix Part A for at least 2 minutes using a paint mixing paddle attached to a 1/2" low speed drill (<450 RPM). Then pour entire contents of Part B into the Part A pail while continuing to mix for 2 to 3 minutes.

Volume Mixing – Pre-mix Part A then pour the appropriate volume of each component into separate measuring cups to ensure a proper volume mix ratio then, in a separate mixing vessel, pour in each measured component then mix for 3 min. using a paint stir stick or drill mix with a paint mixing paddle.

Color Tinting (OPTIONAL) – For additional colors other than light gray, add 3 oz. (roughly 5% by volume) of Smith's ISC Color Packs into SKM Part A then thoroughly mix to a uniform color consistency using a 1/2" low speed drill (<450 RPM).

APPLICATION: A finishing trowel or drywall tape knife may be used for patching or skim-coating applications. Dependent upon the depth of cracks, holes and voids, multiple lifts may be necessary, allowing 45 minutes or more between lifts (do not exceed 24 hours between lifts without sanding).

APPLICATION: A finishing trowel or drywall tape knife may be used for patching or skim-coating applications. Dependent upon the depth of cracks, holes and voids, multiple lifts may be necessary, allowing 45 minutes or more between lifts (do not exceed 24 hours between lifts without sanding). It is highly recommended to grind or sand prior to applying subsequent layers regardless of type.

Apply Smith's SKM with a finishing trowel to the substrate using sufficient pressure to fully fill all voids then feather out over the surrounding areas. Large areas can be finished using a flex blade smooth or blue steel trowel.



Remove excess material as necessary via diamond grinding to smooth out the surface flush with the surrounding substrate elevation. Length of cure prior grinding is temperature and thickness dependent.



Diamond grind flush to surrounding hard surface elevations for a seamless repair.

RECOAT: Smith's SKM typically cures hard enough to sand or diamond grind without imprinting or scarring the surface within 2 hours at 72°F / 50% Humidity. Cooler temperature and/or lower humidity will extend the necessary cure time and higher temperatures / humidity will accelerate the cure of Smith's SKM.

Smith's highly recommends sanding to degloss the surface of Smith's SKM or diamond grinding then cleaning off the dust/debris via vacuuming then Acetone solvent tack rag (DO NOT USE ALCOHOL based SOLVENTS) even if the repairs are smooth and a satisfactory finish. This will improve adhesion between the Smith's SKM and the subsequent layer.

CLEAN-UP: Tools should be cleaned immediately while still fresh with wet product using a solvent such as Xylene. Once set, Smith's SKM will need to be mechanically removed via grinding or razor shaving. Cured material on metal tools requires mechanically scraping or possibly the use of a soldering torch (i.e. MAP gas) to overheat the material for easier scraping from tools.

LIMITED LIABILITY:

Upon information, belief and to the best of our knowledge, the information contained herein is true accurate as of the date of issuance of this particular document and any and all information conveyed, whether expressed or implied is subject to change without prior notice. We guarantee our products to conform to Smith Paint Products quality control standards, but not to any other standards unless specifically stated in written documentation. Smith Paint Products assumes no liability for coverage, performance, injury results from use, misuse or usage not described in any promotional materials or regulatory infraction determined by using our products. The applicator assumes all liability for use and local regulatory compliance. Promotional materials are not a supplement to any product purchase agreement, nor should such documents be considered a type of contract, if any is reduce to writing.

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 along with the invoice that matches said quantity.

NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SMITH PAINT PRODUCTS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. DO NOT PURCHASE AND USE THIS PRODUCT IF YOU HAVE NOT AGREED TO THE ABOVE TERMS.



**4A TO 1B
VOLUME MIX RATIO**



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