



Application Instructions

EPOXY U100 – THIN-MIL (3-COAT SYSTEM) CLEAR OR PIGMENTED SOLID COLOR

PDS-ETM-52318

These instructions are not intended to show product recommendations for specific service. They are issued as an aid in determining correct surface preparation, mixing instructions and application procedure. These instructions should be followed closely to obtain the maximum service from the product.

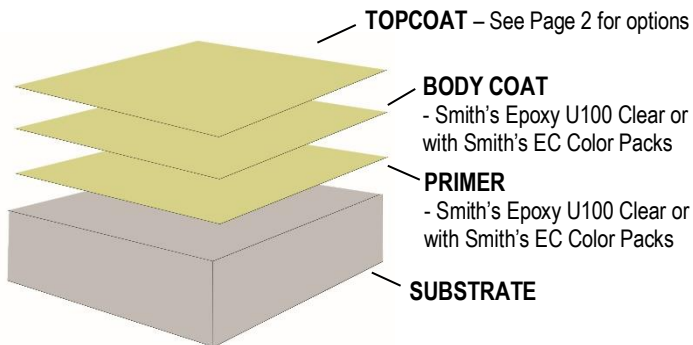
DESCRIPTION:

Smith's Epoxy U100 Thin-mil, Solid Color or Clear System is a 3 coat seamless floor coating system ideal for interior commercial, retail, institutional and residential applications. Thin-mil (3-Coat) System is typically installed between 15-30 mils making it ideal for Aviation Hangars (Military or Executive), Warehouses, Showrooms, Mechanical Rooms, and more.

HIGHLIGHTS:

- Meets requirements for Unified Facilities Guide Specification 09 67 23.15 for typical 3 coat, thin-mil floor coating systems for aircraft hangars
- Resistant to Hot Tire Pick-up
- Good Stain and Chemical Resistance
- Pigmented – 16 Standard Colors Available
- Economical
- Low VOC's – Available in all regions

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AREA PREPARATION: Be sure to mask or cover all areas that are not intended to be coated; including, but not limited to; door frames, doors, walls and windows.

NECESSARY TOOLS and EQUIPMENT:

- Plastic Sheeting or Ram Board to cover floor for mix station
- Jiffy mixing paddle
- Low speed ½" drill (Variable Speed 650 rpm or less)
- 5 gallon Plastic Mixing Buckets
- 18" wide, Premium, Non-Shed 3/8" Nap Paint Roller Covers
- 18" wide, non-metallic Paint Roller Frames
- Multiple Extension Poles
- Spiked shoes or Soccer Cleats
- Flat Window Squeegee or Magic Trowel (optional)
- V-Notched Squeegee for primer and body coats (optional)
- Wide Boy Paint Tray (for topcoat Dip & Roll application)
- Cleaning Solvent (Acetone, MEK, Xylene)

NOTE: The mix station and all application equipment should be ready for immediate use prior to mixing any product.

SURFACE PREPARATION: The surface preparation is the most important phase of a success floor coating application. The more detail and time dedicated to preparation will dramatically affect the appearance as well as the durability of the finished floor. Proper floor preparation maximizes the product longevity, minimizes potential failures and creates the best environment for an aesthetically pleasing installation.

1) Allow new concrete to cure for at least 28 days to obtain ideal design strength (28 days per 1" thickness for optimal moisture content). Coatings applied to a damp or incompletely cured concrete substrate may loss of adhesion or develop undesirable surface irregularities. Moisture Vapor Testing is always recommended when coating directly over concrete.

*See "Moisture /Alkalinity" section on page 3 for more details

2) Concrete Surface Profile - CSP 2 to CSP 4 must be achieved via mechanical grinding with a 30 (or less) metal bonded diamonds or shotblasting. If water is introduced to the intended application area, allow substrate to fully dry. Please refer to ICRI Guideline 310.2R2013 for more in-depth preparation details and recommendations.

3) Remove paint, adhesives and loose particulates from the intended application surface.

CONTAMINANTS: 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. Core sample Petrographic Analysis is the best method for testing of concrete for contaminate type and depth as well as for documenting and determining if other risks exist prior to proceeding with quoting and application of a flooring system. It is the contractors' responsibility to determine the substrate suitability and the course of action for remediation. Smith Paints is a product manufacturer, NOT a testing or analysis service but may provide testing lab references upon request. When in doubt, hire a third party inspector with appropriate certifications and credentials.

Delamination and/or breakdown due to the following causes can be determined via Petrography:

- [AAR \(Alkali Aggregate Reaction\)](#)
 - [ACR \(Alkali-Carbonate Reaction\)](#)
 - [ASR \(Alkali-Silica Reaction\)](#)
- Hydrostatic Pressure
- Near Surface ASR (may occur in certain environments which have been typically treated with Sodium Silicates or Potassium Metasilicates)
- Substrate contamination (i.e. Oils, Solvents, PERT, PCB's, Silicone, etc.)

CHEMICAL CONTAMINATION: Chemical contamination should be determined and may require additional testing. Once the type of contaminant is determined, contact Smith Paint Products for recommendations while following local regulations regarding contaminant and disposal.





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OIL CONTAMINATION: [Smith's Oil Clean](#) may be used to remove oils, such as petroleum, synthetic, and food oils, from concrete & other mineral based substrates prior to mechanical preparation.

SILICATE CONTAMINATION: Substrates which may have been previously treated with silicates (Potassium or Sodium Silicates) such as polished or burnished concrete as well as certain surface hardeners such as Ashford Formula or similar may skew moisture testing results.

A good indication of potential silicate contamination may be seen during traditional moisture testing with abnormally high pH (above 11.5 to 14 pH) but relatively low CaCl reading (less than 6 lbs.) and RH readings above 85%.

Concrete contaminated with silicate densifiers/hardeners of these types must be mechanically prepared followed by cleaning [Smith's Green Clean Pro](#) 24 hours prior to moisture vapor and pH testing in order to obtain accurate readings, otherwise, all testing and subsequent moisture vapor emission warranties are null and void.

MIXING INSTRUCTIONS: Mix enough Epoxy U100 that can be used and tied into with preceding batches within 20-25 minutes on the floor. Immediately pour out the mixed Epoxy U100 in ribbons onto the floor and spread while continuing this process tying into the wet edge with freshly mixed Epoxy U100 until complete.

NOTE: Allowing mixed epoxy to remain in a large mass, such as a container or 5 gallon pail, for more than 5 minutes will significantly decrease pot life and should be poured out as soon as possible to obtain the maximum working time (*up to 35 minute pot life at 72°F / 50% RH*). Higher temperatures and humidity will reduce pot life. Substrates exposed to sunlight during installation will reduce working time in that area of the floor.

Part Mixing Ratio: Epoxy U100 is a 2 Parts A to 1 Part B by volume mixture. Accurately measure the amounts in measuring cups carefully, then combine the 2 components and mix counter-clockwise for one full minute using a low speed drill (<650 RPM) with a paint mixing paddle ensuring both the bottom and sides of the mixing vessel are thoroughly blended.

DO NOT MIX AT HIGH SPEEDS to avoid air and moisture entrapment.

Mixing full 3 gallon kits: In an empty 5 gallon pail, pour in the entire contents of Epoxy U100 Part A and Epoxy U100 Part B. If a solid color is desired, add 1 unit of Smith's EC Epoxy Colorant to each kit. Mix using a 1/2" low speed drill (less than 650 RPM's) with a paint mixing paddle for 2 minutes.

NOTE: When using Epoxy U100 Part A's that had the EC Epoxy Color Packs added on a previous day, always drill blend the Part A's again prior to use. Also, it is a good idea to "box" color packs, especially if using color packs from multiple batches, to ensure consistent solids colors.

APPLICATION METHOD: Smith's Epoxy U100 may be applied via brush, roller and/or Notched Squeegee/Window Squeegee/Magic Trowel then back rolled.

ROLLER APPLICATION: Use a 3/8 inch non-shed solvent resistant roller cover.

BRUSH APPLICATION: Utilize traditional bristle brush application for corners and edges.

INSTALLATION: *Cure times based on 72°F – 40% RH*

- PRIMER** – Apply a coat of Smith's Epoxy U100 or Epoxy FC125 clear or with EC Epoxy Color Pack at a rate of 5-7 mils ≈ 225-320 sq.ft. per gallon. Allow to cure:
 - Epoxy U100 ≈ 4 – 5 hours
 - Epoxy FC125 Fast Cure ≈ 2 - 3 hours
- BODY COAT** – Apply a body coat of Smith's U100 Epoxy U100 or Epoxy FC125 clear or with EC Epoxy Color Pack at a rate of 8-12 mils ≈ 135-200 sq.ft. per gallon pouring out in ribbons then spread with a squeegee followed immediately by back rolling. Allow to cure:
 - Epoxy U100 ≈ 4 – 5 hours
 - Epoxy FC125 Fast Cure ≈ 2 - 3 hours
- TOPCOAT** – A variety of topcoats are available depending on the desired aesthetics, cure rate/return-to-service, sheen, and chemical exposure anticipated:
 - Smith's Polyurethane WB (Gloss Sheen, Slow Cure)
 - Smith's Hi-Wear 90S (Low Sheen, Regular Cure)

* Mil and sq.ft. coverage are theoretical/approximate. Substrate porosity will affect coverage rates.

APPLICATION TEMPERATURES:

	Material	Surface	Ambient	Humidity
Best	60°-80°F	65°-80°F	65°-85°F	10-60%
Minimum	50°F	50°F	50°F	0%
Maximum	90°F	85°F	95°F	70%

- Do not apply when substrate has direct sun exposure

- High humidity will decrease pot life

- USE Smith's Epoxy FC125 for Cooler Temperature installations (between 50°F to 70°F)

RECOATING: Smith's Epoxy U100/FC125 should be recoated as soon a previous coat is dry to the touch. If recoating after 24 hours has elapsed, degloss existing sealer film with a black janitor pad, 80-100 grit sandpaper or 80 – 120 grit sanding screen.





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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 24 hours before neutral cleaner or water exposure. 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 maximize 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.

It is good practice to develop a floor maintenance schedule to be performed at the end of each shift and a set day per week or month for heavy cleaning:

- 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.

Health Department or DEA regulations may necessitate more frequent and stringent cleaning practices as well areas more prone to oils, inks, chemicals, etc. on the floor surface.

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. [Smith's Neutral Clean](#), 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 drag or drop 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 pallets, etc.
- 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.
- 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 aviation tires and high performance car tires. Plasticizer will stain coating and commercial flooring leaving an amber, yellow-like stain that can be permanent. 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 hangar with lighter colored floors. 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. Some tire stains can be removed is cleaned before a set-in stain occurs using a d-Limonene based degreaser and some mild agitation using an orbital, low speed floor machine.

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CHECK FOR MOISTURE: Testing concrete moisture via both Calcium Chloride (ASTM F1869) and In-situ Relative Humidity testing (ASTM F2170) is recommended.

Acceptable Readings:

- Calcium Chloride testing (ASTM F1869)
<10 pounds and between 8.5 to 11.5 pH
- Relative Humidity (ASTM F2170)
<85%

Testing which occurs in non-acclimated interior environments will void the results. Follow the testing manufacturer's instructions precisely or visit www.astm.org, see ASTM F1869 or F2170, to purchase the test methods.

Should moisture vapor emissions exceed the above thresholds, an appropriate moisture vapor remediation primer, such as Smith's Epoxy MAC100 Regular Cure, Smith's Epoxy MAC125 Fast Cure or similar epoxy based moisture remediation primer with a full broadcast of sand. Silicate based "moisture vapor remediation" products cannot be proven to lower the vapor permeability nor can testing determine whether an acceptable permeability has been achieved after treatment.

The absence of an effective moisture vapor barrier may create an environment for moisture vapor transmission as well as high levels of alkalinity in concrete slabs (generally, but not limited to interiors). Smith Paint Products is not responsible for failures due to the presence of moisture vapor emissions and/or high levels of alkalinity.





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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.

LIMITED LIABILITY: Liability is limited to replacement of defectively manufactured product with same type and cost of the original 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. 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. SHOULD YOU NOT AGREE WITH ANY OF THE ABOVE TERMS, DO NOT PURCHASE THE PRODUCT(S). Should a product defect be suspected at the time of application, cease use of the product immediately and notify Smith Paint Products for investigation otherwise 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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