

Smith's

System Application Guide

VINYL CHIP

RANDOM BROADCAST EPOXY SYSTEM

PDS-VCER-061421

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.

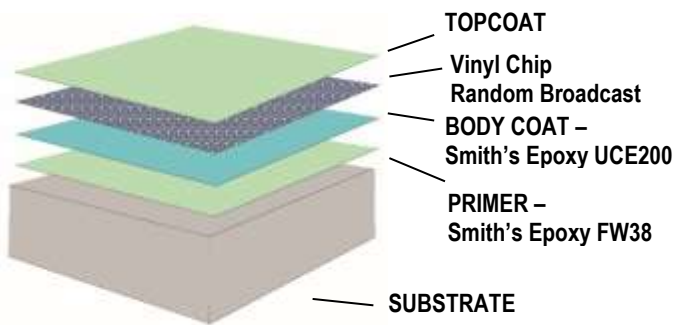
DESCRIPTION:

Smith's Random Broadcast Epoxy Vinyl Chip System is an economical, decorative seamless floor coating system ideal for light commercial and residential flooring applications, such as retail spaces, showrooms, garages, basements, etc.

HIGHLIGHTS:

- Decorative
- Economical
- Numerous Color & Sealer options
- Resistant to Hot Tire Pick-up
- Good Stain & Chemical Resistance
- Low Odor & VOC's – Available in all regions

Random Broadcast Vinyl Chip Floor – Roughly +15 mils



Smith Paint Products offers a variety of systems and topcoats depending on the desired finish, chemical exposure, etc. Please contact Smith Paints toll free or visit www.smithpaints.com for topcoat options.

NECESSARY TOOLS and EQUIPMENT:

- Plastic Sheeting or Ram Board to cover floor for mix station
- Jiffy® mixer or paint mixing paddle
- Low speed ½" drill (Variable Speed 450 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
- [Flat Squeegee](#) (Seal Coat placement)
- [V-Notched 8-12 mil Squeegee](#) (Body Coat placement)
- Spiked shoes or Soccer Cleats
- Cleaning Solvent (Acetone, MEK, Xylene)

NOTE: Mix station & all application equipment should be ready for immediate use prior to mixing any product. Higher temperatures & humidity will shorten pot-life.

LIMITATIONS:

- When applying multiple layers, always allow the previous layer to hard cure before proceeding with the next layer
- Avoid exposing freshly applied coatings to air movement, direct sunlight, freezing, water & direct sources of heat (i.e. radiant in-floor heat)
- For wheeled traffic/fork lift traffic conditions, a minimum of an ICRI CSP 3 profile is required for mechanical preparation
- Epoxy products are *NOT U.V. Stable* – Exposure to U.V. light will dull, discolor and / or chalk over time
 - [Smith's Epoxy U.V. Absorber](#) additive (sold separately) can be used to lessen U.V. damage / discoloration in 100% Solids epoxy but not completely eliminate epoxy damage / discoloration over time
- Wood substrates must yield the correct deflection criteria of L / 360 per ASTM C 627 (i.e. Deflection from 300 lbs. concentrated load standard test method) and require a 60 mil primer of [Smith's Poly-FLEX](#) prior to the application of the Random Broadcast Epoxy Vinyl Chip System
- DO NOT INSTALL when the Dew Point is within $\pm 5^\circ$ of the air temperature

TEMPERATURE & HUMIDITY: Substrate temperature & materials must be maintained between 50°F (10°C) to 90°F (32°C) with less than 80% Ambient Humidity for 24 hours prior to & 24 hours after installation.

INSPECT THE SUBSTRATE: Ensure the substrate is structurally sound & solid as well as free of any contaminants that may act as a bond breaker, such as oil, paint, densifier/sealers, dirt, debris, adhesives, loose/peeling existing coatings, curing compounds, wax, silicone, etc.

CONTAMINATION OF SUBSTRATE: Concrete is porous & 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: [Smith's Oil Clean](#) may be used to remove oils, such as petroleum, synthetic & food oils, from the surface of the concrete prior to mechanical preparation. Wood substrates contaminated with oil may require removal & replacement of the oil contaminated area with new wood to ensure proper adhesion.

Should oil encapsulation be required after cleaning with [Smith's Oil Clean](#) and shotblasting, use [Smith's Epoxy MAC125](#) as an oil stop primer (may be tinted with Smith's ISC). Smith's Epoxy MAC125 must be applied at no less than 160 sq.ft. neat. Do NOT broadcast Vinyl Chip or Quartz into the primer layer directly applied to oil contaminated concrete to ensure proper encapsulation of the oils in the substrate.

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, cove base and windows/window frames.



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SURFACE PREPARATION: The surface preparation phase of a resinous floor system should be viewed as the most important. Proper floor preparation results in the product's longevity, minimizes potential failures and creates the best environment for an aesthetically pleasing installation. In short, the more detail and time allotted to this phase of the project will dramatically affect the appearance as well as the durability of the finished floor.

- 1) Allow new concrete to cure for at least 28 days. Application of a resinous coating to a damp surface or incompletely cured concrete may cause a hazy appearance or blushing to occur. Moisture Vapor Testing is always recommended when coating directly over concrete.

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

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

JOINTS, CRACKS & PATCHING: Honor expansion joints at the finish floor elevation. Follow ACI 224.3R-95: Joints in Concrete Construction guidelines for proper filling of construction and control joints. Cut all joints and moving cracks open with a Diamond cutting blade and fill with an appropriate semi-rigid joint filler, such as [Smith's Poly JF](#), prior to priming the substrate. Best practice is to honor the joint at the surface after the coating system is applied then fill with an appropriate joint filler can lessen joint telegraphing. Static joints may allow the coating system to bridge over [Smith's Poly JF](#) but is NOT recommended to install a floor coating system over caulking, silicone, cement patching compounds as well as Polyurea & traditional Polyurethane flexible joint fillers.

ACI recommends allowing a concrete slab to cure for a minimum of 60 to 90 days or longer to allow the slab to shrink and acclimate to the intended joint width thus reducing the risk of joint wall separation from the joint filler. Cooler climate applications such as freezer and coolers must be brought up to and held at a minimum of 45°F substrate temperature for no less than 10 days prior to as well as 7 to 10 days after filling with an appropriate semi-rigid joint filler, such as [Smith's Poly JF](#), ideally longer if possible.

Patching of chips, gouges, etc. may be repaired with a variety of different, compatible coating materials, to include [Smith's SKM](#), [Smith's Epoxy GEL150](#), [Smith's Epoxy U100](#) or [Smith's Epoxy FC125](#) mixed with Silica Fume, [Smith's Poly PCF-45](#) or [Smith's 4in1 Overlay](#) (Smith's 4in1 Overlay must cured for 2 to 3 days prior to coating).

Ensure patching products are hard enough to walk on without the risk of damage before proceeding with subsequent sanding & coatings. Should the surface of the concrete require extensive resurfacing or repairs, please contact Smith Paints for more recommendations based on the site conditions.

MOISTURE / ALKALINITY: ****CHECK FOR MOISTURE****

For interior applications, testing concrete moisture via both the Calcium chloride (ASTM F1869) and In-situ Relative Humidity (ASTM F2170) methods are highly recommended to accurately determine both the Moisture Vapor Emission Rate (ASTM F1869) & the available Moisture Content (ASTM F2170) at the time of testing. Using one test method will not give all of the necessary information & may not indicate other potential risks such as contaminants, etc. that pose a risk for delamination, chemical attack, etc. which are not caused by moisture vapor emissions or high alkalinity.

[Smith's Epoxy MAC100](#) or [Smith's Epoxy MAC125](#), in conjunction with proper testing & mechanical preparation, will reduce the moisture vapor emission rate to a level within the tolerance of subsequent coatings & traditional floor covering needs.

Follow the testing manufacturer's instructions precisely or visit www.astm.org, see ASTM F1869 or F2170, to purchase the test methods. Testing MUST occur within an acclimated, interior environment for the results to be valid & conclusive.

Never use silicate based products as a means of moisture remediation as these products may crystallize in the pores of the concrete surface and impede on the adhesion of the coating system and are highly discouraged for use under any circumstance. This includes products containing Potassium Silicate, such as Smith's Base Boost, or Sodium Silicate based products, such as Smith's Crete-Boost.

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. Blistering, delamination, flaking, etc. may occur in these environments when a non-breathable coating is applied over the surface of the concrete. Moisture testing is extremely important has part of the investigation process prior to quoting a project and should occur following the most current industry accepting testing methods, such as, a Calcium Chloride test (ASTM F-1869) and/or Relative Humidity probe (ASTM 2170). It is the contractor's responsibility to determine the moisture vapor transmission and pH of a floor. It is the contractor's responsibility to determine whether or not a substrate is sound, solid and suitable.

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.



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MIXING: Mix only that amount of product that can be used within the working time of the current temperature as stated in the packaging label and the product data sheet. Higher temperatures reduce working time and pot-life. See individual product data sheet for detailed, product specific instructions.

Measure the amounts carefully and mix counter-clockwise for one full minute using a low speed drill with a paint mixing paddle ensuring both the bottom and sides of the mixing container have been thoroughly blended.

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

NOTE: Mechanical agitation is recommended

APPLICATION METHOD: [Smith's Epoxy FW38](#) and [Smith's Epoxy UCE200](#) may be applied via brush, roller and/or squeegee.

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

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

APPLICATION TEMPERATURES:

	Material	Surface	Ambient	Humidity
Best	60°-80°F	65°-80°F	65°-85°F	10%-60%
Minimum	60°F	60°F	55°F	0%
Maximum	90°F	90°F	95°F	75%

- Do not apply when substrate has direct sun
- High temperature reduces working time and pot-life
- For cool temperature installations, USE [Smith's Epoxy FC125](#) for priming and body coat during cool temperature applications (45°F to 60°F substrate surface temperature).

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.

INSTALLATION: Cure times based on 72°F / 40% Humidity

- 1) Key in all termination points by saw cutting 1/8th inch wide by 1/8th inch deep termination lines at doorways, drain, etc.
- 2) For a seamless appearance, all joints must be filled with an appropriate semi-rigid joint filler (i.e. [Smith's Poly JF](#) or [Smith's Poly JF/FC](#)) then finished flush to the concrete surface
- 3) Repair all chips, cracks, gouges, divots, and other floor irregularities with [Smith's PCF-45](#), [Smith's SKM](#) or similar then grind smooth and flush to surrounding surface
- 4) Primer (*Recommended / best practice*) - Apply a thin coat of Prime (OPTIONAL / best practice) with [Smith's Epoxy FW38](#) with [Smith's WSC Color Packs](#) at a rate of 200 to 225 sq.ft. per gallon (roughly 7-8 mils wft)
- 5) Allow to cure for roughly 3 hours or until take free
- 6) Apply broadcast layer of [Smith's Epoxy UCE200](#) or [Smith's Epoxy U100](#) with [Smith's ISC Color Packs](#) at 130 to 200 sq.ft. per gallon via dip and roll or squeegee then back roll with 3/8" Non-shed solvent resistant roller
- 7) Immediately begin randomly and lightly broadcasting Smith's Vinyl Chip into the fresh epoxy at a rate of 0.02 to 0.04 lbs. per sq.ft.
- 8) Allow to cure overnight
- 9) Scrape off any ridges of Vinyl Chips using a drywall tape knife or similar then vacuum the entire surface thoroughly to ensure all loose Vinyl Chip has been removed
- 10) Seal coat application – Apply a seal coat / topcoat via dip and roll or squeegee then back roll with 3/8" Non-shed solvent resistant roller. Recommended options:
 - [Smith's Polyaspartic 1000](#) @ 100 to 200 sq.ft. per gal.
 - [Smith's Polyaspartic 2000](#) @ 100 to 200 sq.ft. per gal.
 - [Smith's Polyaspartic 5000](#) @ 100 to 250 sq.ft. per gal.
 - [Smith's Poly WB](#) Semi-Gloss @ 250 to 300 sq.ft. per gal.
 - [Smith's Poly WB/LS](#) Low Sheen @ 350 to 400 sq.ft. per gal.
 - [Smith's MCU-60](#) @ 275 to 400 sq.ft. per gallon
- 11) Allow to cure overnight before exposing to foot traffic. Heavy traffic varies based on the final topcoat.



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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 48 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 will areas more prone to oils, inks, chemicals, etc. on the floor surface.

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 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 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 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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