

# Smith's

## System Application Guide

# VINYL CHIP

### HEAVY COMMERCIAL TRAFFIC, SINGLE FULL BROADCAST

#### 1/4" VINYL CHIP BROADCAST BLENDS

### VINYL CHIP SYSTEM

PDS-VCFBHT-033123

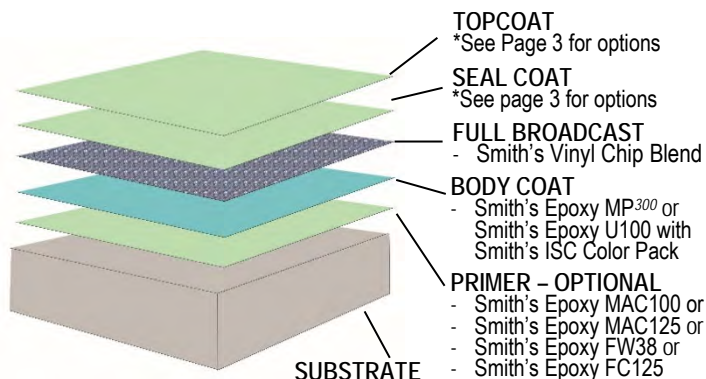
*These instructions are not intended to show product recommendations for specific service. They are issued as an aid in determining correct surface preparation, mixing instructions and application procedure. These instructions should be followed closely to obtain the maximum service from the product.*

**DESCRIPTION:** Smith's Heavy Commercial Traffic, Full Broadcast Vinyl Chip System is a single broadcast seamless decorative resinous interior floor coating system ideal for moderate to heavy traffic in retail, commercial, institutional, medical & veterinary, kennels, restrooms, waiting rooms, break rooms / cafeterias as well as residential applications. This decorative resinous floor system offers numerous color options which result in a durable, seamless decorative floor coating that is easy to maintain. This system consists of a 100% Solids, Pigmented Epoxy base coat which receives a full broadcast to rejection of Vinyl Chip followed by a clear grout coat with optional Seal Coats or Topcoats.

#### HIGHLIGHTS:

- Durable – For moderate to heavy commercial traffic
- Easy to clean
- Resistant to Hot Tire Pick-up
- Good Stain & Chemical Resistance
- Decorative
- Low Odor & Low VOC's options for finish layers

**Vinyl Chip Full Broadcast System – Roughly 60 mils**



*\*Smith's Epoxy U.V. Absorber Additive is highly recommended when applied as the seal coat over Vinyl Chip, even if a U.V. Stable topcoat will be applied over the epoxy. Aliphatic products applied clear over epoxy will NOT reduce Ultra Violet light damage to the epoxy. Artificial lighting emits varying amounts of U.V. Light depending on the type of light bulb. All epoxy will amber over time & will be more noticeable with lighter colors.*

#### NECESSARY TOOLS and EQUIPMENT:

- Plastic Sheeting or Ram Board to cover floor for mix station
- Paint mixing paddle
- Low speed 1/2" drill (Variable Speed ≤450 rpm)
- 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 to 12 mil Squeegee](#) (Body Coat placement)
- Spiked shoes or Soccer Cleats
- Cleaning Solvent (Acetone, MEK, Xylene)

**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.

**SUBSTRATE PREPARATION:** Mechanical substrate preparation is the ***MOST IMPORTANT*** phase of a successful floor coating application. Proper floor preparation results in the product's longevity, minimizes potential failures & creates the best environment for an aesthetically pleasing installation. In short, the more detail & time allotted to this phase of the project will dramatically affect the appearance as well as the durability & longevity of the finished floor.

- 1) Clean the substrate with a detergent scrub using [Smith's Neutral Detergent](#), or similar, and rinse with clean, potable water to remove surface dirt, light surface grease/oil and contaminants prior to mechanical preparation.
  - a) Heavy grease & oil should be removed using [Smith's Oil Clean](#)
- 2) Allow new concrete to cure for at least 28 days to obtain ideal design strength of the concrete to allow for proper preparation\*
  - a) 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
  - b) \*See "Moisture/Alkalinity" section for fast-track construction a newly poured concrete slab (Cured 10 to 14 days cure at 72°F)
- 3) Allow new concrete to cure for at least 28 days
  - a) A hazy appearance, blistering or loss of adhesion may occur when applied to damp or incompletely cured concrete. Moisture Vapor Testing is always recommended when coating directly over concrete
  - b) \*See "Moisture /Alkalinity" section on page 2 for more details
- 4) Remove paint, adhesives & loose particulates from the intended application surface
- 5) Mechanically prepare to a Concrete Surface Profile - CSP 2 to CSP 4 via mechanical grinding with a 40 grit (or less) metal bond diamonds or shot-blasting
  - a) Properly prepared concrete substrate will be uniformly "white" in color & readily absorb liquids within 60 seconds
  - b) **DO NOT USE MURIATIC/HYDROCHLORIC ACID TO PREPARE CONCRETE AS CHLORIDE CONTAMINATION CAN OCCUR**
  - c) If water is introduced to the intended application area, allow substrate to fully dry
  - d) **DO NOT USE RESIN BOND DIAMONDS FOR GRINDING**
- 6) Key in all termination points by saw cutting 1/8<sup>th</sup> inch wide by 1/8<sup>th</sup> inch deep lines at doorways, drain, etc.
- 7) For exterior applications – Remove 1 to 2" wide & deep of grass, mulch, landscaping rocks, etc. against the concrete to be treated to expose the vertical transition & clean
- 8) 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-JFire](#)) & finished flush to the concrete surface \*See Page 2
- 9) Repair all chips, cracks, gouges, divots, and other floor irregularities with [Smith's PCF-45](#), [Smith's SKM](#) or similar then grind smooth & flush to surrounding surface \*See Page 2



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## VINYL CHIP

### HEAVY COMMERCIAL TRAFFIC, SINGLE FULL BROADCAST

### VINYL CHIP SYSTEM

PDS-VCFBHT-033123

#### 1/4" VINYL CHIP BROADCAST BLENDS

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**TEMPERATURE & HUMIDITY:** Substrate & material temperature must be maintained for 24 hours before & after application.

	Material	Substrate	Ambient	Humidity
<b>Best</b>	60° to 80°F	60° to 85°F	65° to 85°F	30 to 60%
<b>Minimum</b>	50°F	50°F	50°F	25%
<b>Maximum</b>	90°F	85°F	95°F	80%

**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.

**SUBSTRATE CONTAMINATION:** 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 & a proper course of remediation.

**CHEMICAL CONTAMINATION** – If chemical contaminants exist, additional testing may be required. Once the type of contaminant is determined, contact Smith Paint Products for recommendations. Petrography of concrete cores may be necessary to determine what chemicals are present as well as the depth of penetration.

**OIL CONTAMINATION** – [Smith's Oil Clean](#) may be used to remove oils, such as petroleum, synthetic and food oils, from the surface of the concrete prior to mechanical preparation.

- 1) Scrape to remove heavy build-up of oil and grease
- 2) Shotblast to a CSP 3 to remove the surface paste of the concrete as well as paint, adhesives, dirt, debris, etc.
- 3) Wet down a 10 ft. x 10 ft. area with water
- 4) Pour ½ gallon of [Smith's Oil Clean](#) on the surface
- 5) Use a low-speed orbital floor machine with a soft bristle brush head to agitate the microbial cleaner across the entire area in multiple passes for approximately 10 to 20 minutes
- 6) DO NOT ALLOW AREA TO DRY - Keep the area wet and reapply water as necessary
- 7) Allow to dwell for a minimum of 30 minutes, longer for heavy contamination
- 8) Use a wet vacuum or an auto scrubber to extract the remaining liquid thoroughly
- 9) Clean water rinse and extract again leaving no puddles nor standing water, including in gouges, chips, cracks or joints
  - a) If oil continues to weep out of the concrete, repeat the process
  - b) Excessive oil contamination may require 2 applications with the second application being soaked with water then covered with at least 3 mil plastic overnight then shotblasted again to remove purged contamination
- 10) While the floor remains damp, apply [Smith's Epoxy MAC125](#) at 10 to 12 mils (333 to 400 sq.ft. per kit)
- 11) Allow to cure a minimum of 5 hours or overnight
- 12) Screen the surface of the primer to remove any contamination that may have floated through the primer before it cured

- 13) Vacuum the dust off the primer then clean with warm potable water and Dawn soap or [Smith's Neutral Detergent](#) (16 parts potable water to 1 part by volume [Smith's Neutral Detergent](#))
- 14) **\*\*DO NOT USE simple green or Soy based detergents\*\***
- 15) Dry mop the floor then allow to air dry for 60 to 90 minutes or use a floor fan to assist in completely drying the surface
- 16) Tack rag the surface with Acetone on a lightly dampened microfiber mop head or cotton rag replacing the rag frequently. Repeat until surface is clean then allow to dry for 30 minutes

simple green® is registered trademark of Sunshine Maker's Inc.

#### MOISTURE & ALKALINITY TESTING – INTERIOR CONCRETE

Follow the testing manufacturer's instructions precisely or visit [www.astm.org](http://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.

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.

This system can withstand up to 3 lbs. (per ASTM F1869) of Osmotic Moisture Vapor transmission as well as up to 75% Relative Humidity (per ASTM F2170) when applied over existing concrete slabs mechanical profiled to CSP ≥2 via diamond grinding.

Use [Smith's Epoxy MAC100](#) or [Smith's Epoxy MAC125](#) (@23 mils Perms = <0.1 grams / 24 h\*m²\*mmHg per ASTM E96 / F3010) 2 coat system with a full Vinyl Chip broadcast into the pigmented second coat should osmotic moisture vapor exceed 3 lbs. / 75% Relative Humidity / ≥12 pH.

- 1) Shotblast to a CSP 3 to remove the surface paste of the concrete as well as paint, adhesives, dirt, debris, etc.
- 2) Apply a clear primer coat of [Smith's Epoxy MAC100](#) or [Smith's Epoxy MAC125](#) at 10 to 12 mils
 

*NOTE: Silicate-based products are highly discouraged as a means of moisture remediation as these products may crystallize in the pores of the concrete surface & impede on the adhesion of the coating system.*
- 3) Allow primer to cure a minimum of:
  - a) [Smith's Epoxy MAC100](#) = 12 hours @ 72°F / 24 hours @ 60°F
  - b) [Smith's Epoxy MAC125](#) = 3 hours @ 72°F / 4 hours @ 60°F
- 4) Apply a pigmented second coat of Smith's MAC series primer mixed with 1 can of [Smith's ISC Solid Color Packs](#) per kit spread with a notched squeegee at 10 to 12 mils (333 to 400 sq.ft. per kit) then back rolled with a 3/8" nap shed resistant roller cover
- 5) Scrape, sweep then thoroughly vacuum entire surface to remove loose vinyl chip after curing for a minimum of:
  - a) [Smith's Epoxy MAC100](#) = 12 hours @ 72°F / 24 hours @ 60°F
  - b) [Smith's Epoxy MAC125](#) = 3 hours @ 72°F / 4 hours @ 60°F
- 6) Proceed with grout coat then remaining steps on page 4:

Smith Paint Products is strictly a product manufacturer & 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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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.

**TEMPORARY HEAT** – 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 petroleum 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 in use
- Fisheyes are a result of surface contamination

**CLEANING:** Detergent scrub with [Smith's Neutral Detergent](#), or similar, and rinse with clean, potable water to remove surface dirt, light surface grease/oil and contaminants prior to mechanical preparation. Heavy grease and oil should be removed using [Smith's Oil Clean](#).

If a densifier or dissipating curing compound is believed to have been present, use [Smith's Green Clean Pro](#) biodegradable etching gel after mechanical preparation methods.

**JOINTS:** Cut all joints open with a Diamond cutting blade and fill with an appropriate semi-rigid joint filler, such as [Smith's Poly JF](#) or [Smith's Poly JF/FC](#). Use a dry fine grade washed sand to prefill joints to



**Control Joint**

provide a bond break at the bottom and to support the joint filler. Use a broom to remove any excess sand leaving the recess twice the width of joint.



**Construction Joint**

Epoxy is not as flexible as a moving joint, honoring of the joint at the surface after the resurfacing layer is applied then fill will an appropriate joint filler can lessen joint telegraphing. Please contact Smith's for more recommendations for crack repairs, joint wall rebuilding, etc.

**CRACKS, CHIPS & GOUGES:** Surface defects may be repaired with a variety of different, compatible coating products, including but not limited to:



- [Smith's SKM](#)
- [Smith's Epoxy GEL150](#)
- [Smith's Epoxy GEL150/FC](#)
- [Smith's Epoxy MP300](#) mixed with Fumed Silica
- [Smith's Epoxy U100](#) mixed with Fumed Silica
- [Smith's Epoxy FC125](#) mixed with Fumed Silica
- [Smith's Poly PCF-45](#)

Ensure patching products are hard enough to walk on without the risk of damage before proceeding with subsequent sanding & coatings.

Resinous repair methods are preferred. Should a cementitious repair compound be used for repairs, it *must be*:

- non-water soluble; >5,000 psi
- Recommended as a direct traffic bearing surface / topping / overlay
- rated for exterior use
- cement product data sheet states "for use under a resinous coating" or similar

Should the surface of the concrete require extensive resurfacing or repairs, please contact Smith Paints for more recommendations based on the site conditions.

**APPLICATION:** See individual product data sheets for detailed instructions on the package label or click product name hyperlinks throughout this document.

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

**NOTE:** Mechanical agitation is recommended – DO NOT STICK MIX!

- Do not apply while substrate has direct sun exposure during application as bubbles will occur in the film

- High temperatures will reduce working time

- Aliphatic products applied clear over epoxy will NOT reduce Ultra Violet light damage to the epoxy. Artificial lighting emits varying amounts of U.V. Light depending on the type of light bulb

**INSTALLATION:** Cure times based on 72°F / 50% RH

- 1) **PRIMER** (OPTIONAL but best practice) – Apply [Smith's Epoxy FW38](#) with [Smith's WSC Color Pack](#) at 5 to 7 mils ≈ 229 to 321 sq.ft. per gallon using either the dip & roll method with a 1/2" non-shed solvent resistant roller or a [Flat Squeegee](#) then back roll with 3/8" non-shed solvent resistant roller
  - a) Allow to dry until clear & tack-free, typically 2 to 3 hours minimum or overnight (dependent on temperature, air circulation & humidity)
  - b) See Page 2 under "Interior Concrete – Moisture & Alkalinity Testing" section for priming method for moisture vapor remediation
- 2) **BODY COAT & BROADCAST** – Apply [Smith's Epoxy MP300](#), [Smith's Epoxy U100](#) or [Smith's Epoxy FC125](#) with [Smith's ISC Color Pack](#) at 8 to 12 mils ≈ 133 to 200 sq.ft. per gallon using a [V-Notched 8 to 12 mil Squeegee](#) then back roll with 3/8" non-shed solvent resistant roller
  - a) Immediately broadcast Smith's Vinyl Chip into the fresh 100% solids epoxy at a rate of 0.12 to 0.2 lbs. per sq.ft. (200 to 333 sq.ft. per 40 lbs. box)
  - b) Allow the broadcast coat to cure before scraping @ 72°F for:
    - [Smith's Epoxy MP300](#) = 14 to 18 hours
    - [Smith's Epoxy U100](#) = 5 hours
    - [Smith's Epoxy FC125](#) = 2 ½ hours
- 3) Scrap with a flat blade scraping tool to remove any sharp flake edges then sweep up the loose Vinyl Chips using a clean, exploded tip nylon bristle push broom from the surface to reclaim for repairs or future projects followed by thoroughly vacuuming the entire floor surface to remove any remaining loose chip
  - a) Should any bare areas occur requiring touch-ups, apply [Smith's Poly-SEAL](#) with a paint brush or trim roller and sprinkle Vinyl Chip into the wet liquid then allow to dry for 1 hour prior to applying grout coat
- 4) **GROUT COAT** – Apply Grout Coat @ 8 to 15 mils ≈ 107 to 200 sq.ft. per gallon using a [Flat Squeegee](#) then back roll with 3/8" non-shed solvent resistant roller. Product options for grout coat:
  - a) [Smith's Polyaspartic 1000](#)
  - b) [Smith's Polyaspartic 2000](#)
  - c) [Smith's Polyaspartic 5000](#)





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#### INSTALLATION (cont.)

5) **DOUBLE GROUT COAT (optional)** – A second grout coat application will result in less pronounced texture when applied at 8 to 15 mils ≈ 106 to 200 sq.ft. per gallon via flat blade squeegee then back roll with 3/8" non-shed solvent resistant roller over the previous grout coat layer using a clear [Smith's Polyaspartic 1000](#), [Smith's Polyaspartic 2000](#) or [Smith's Polyaspartic 5000](#)

- a) Allow the grout coat to cure overnight
- b) Sand the grout coat with 80 grit sandpaper or sanding screens under a white pad with a low speed orbital floor machine to smooth out any peaks in the surface
- c) Vacuum thoroughly
- d) Solvent tack rag the surface using micro fiber mop with Acetone until clean to remove any remaining dust
- e) \*Do NOT Soak the micro fiber head with solvent – should be lightly damp with Acetone
- f) Using a Flat Squeegee to spread the Seal Coat, pour a ribbon of desired seal coat then evenly spread at a rate of 100 to 200 sq.ft. per gallon followed by back rolling with a 3/8" nap shed resistant paint roller attached to an extension pole. Seal Coat options below:

#### [Smith's Polyaspartic 1000](#)

- Orange Peel Gloss ≈ 225 to 320 sq.ft. per gallon
- Smooth, Gloss ≈ 107 to 160 sq.ft. per gallon

#### [Smith's Polyaspartic 2000](#)

- Orange Peel Gloss ≈ 225 to 320 sq.ft. per gallon
- Smooth, Gloss ≈ 107 to 160 sq.ft. per gallon

#### [Smith's Polyaspartic 5000](#)

- Orange Peel Gloss ≈ 225 to 300 sq.ft. per gallon
- Smooth, Gloss ≈ 80 to 160 sq.ft. per gallon

\* Angular traction additive (i.e. [Smith's Resin Sand](#)) may be added to seal coat

6) **TOPCOATS (OPTIONAL)** – Sanding prior to topcoating will help even out the surface texture. Topcoats may be applied directly to Grout Coats or after optional Seal Coats as the final wear surface.

\* Using more aggressive grit screens or sandpaper may create scratches, swirls & grooves in the finish that topcoats may not hide at 3 to 5 mils

Apply the topcoat at the appropriate rate stated below via dip & roll method:

#### [Smith's Polyaspartic 1000](#)

- Orange Peel Gloss ≈ 225 to 320 sq.ft. per gallon
- Smooth, Gloss ≈ 107 to 160 sq.ft. per gallon

#### [Smith's Polyaspartic 2000](#)

- Orange Peel Gloss ≈ 225 to 320 sq.ft. per gallon
- Smooth, Gloss ≈ 107 to 160 sq.ft. per gallon

#### [Smith's Polyaspartic 5000](#)

- Orange Peel Gloss ≈ 225 to 300 sq.ft. per gallon
- Smooth, Gloss ≈ 80 to 200 sq.ft. per gallon

#### [Smith's Poly-WB](#) Water-based Polyester Polyurethane

- Semi-Gloss ≈ 200 to 300 sq.ft. per mixed gallon
- Low Sheen ≈ 500 to 550 sq.ft. per mixed gallon

\* Angular traction additive, such as [Smith's Resin Sand](#), is highly recommended in areas exposed to grease / oil / soap / water / or less than 60°F service temperatures

7) Allow to cure for 48 to 72 hours at room temperatures (72°F / 50% ambient humidity) prior to placing any cardboard, rubber or plastic items on the surface of the newly coated floor, to include vehicle tires (dependent on temperature, air circulation & humidity. Cooler temperatures will extend the cure rate necessary for traffic exposure)

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

**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 & end users' responsibility to determine the appropriate traction needs & 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.

#### CURE RATE FOR TRAFFIC:

@ 72°F (22.2°C) with  
50% Ambient  
Humidity

	Light Foot Traffic	Heavy Traffic	Full Chemical Exposure
<a href="#">Smith's Poly-WB</a>	16 to 24 hours	24 to 48 hours	7 days
<a href="#">Smith's Polyaspartic 1000</a>	4 hours (@ 8 mils)	24 hours (@ 8 mils)	≤3 days (@ 8 mils)
<a href="#">Smith's Polyaspartic 2000</a>	8 hours (@ 8 mils)	36 hours (@ 8 mils)	≤4 days (@ 8 mils)
<a href="#">Smith's Polyaspartic 5000</a>	10 hours (@ 8 mils)	36 hours (@ 8 mils)	≤3 days (@ 8 mils)

NOTE: Polyaspartic products cure rate will extend when applied greater than 8 mils. Please refer to individual product data sheet for more specific product information. Click on product name above for hyperlink to website product specific documents

**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. [Please click here more in-depth maintenance procedures.](#)



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