POLY-CRETE™ SLB SYSTEM

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POLY-CRETE® SLB

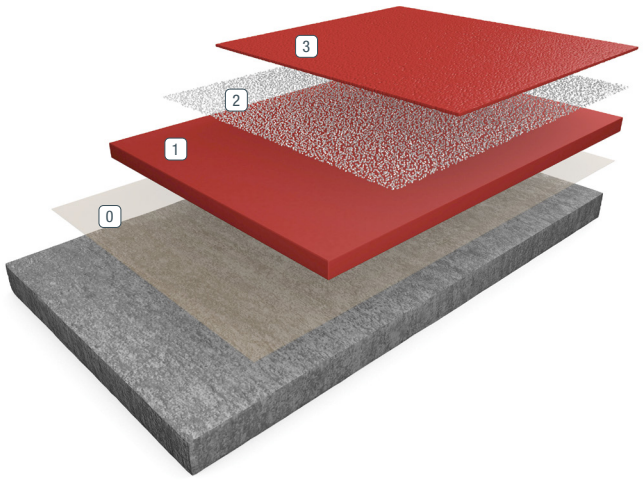
Poly-Crete SLB is a 100% solids, seamless 3/16" cementitious-urethane self-leveling flooring system with a flintshot quartz aggregate broadcast, providing a slip-resistant finish. The body coat is resistant to thermal shock and is moisture mitigating, which can eliminate the use of a primer in most environments, while topcoat options offer a wide selection of chemical- and abrasion-resistant finishes.

BENEFITS

- Self-leveling — A uniform, more even floor system
- Moisture mitigating — Installs in more environments, including those with high moisture levels up to 99% RH
- Non-slip — Texture from the aggregate broadcast aids in a safer floor, even when wet
- Thermal shock resistant — Usable in harsh environments with high thermal cycling or rapid changes in temperature

USES

- Kitchens
- Warehouses
- High-traffic areas
- Storage
- Light manufacturing
- Food processing
- Breweries/distilleries
- Veterinary
- Kennels



0 **Primer**
2 **Broadcast**
1 **Base Coat**
3 **Grout/Seal Coat**

FEATURED COLORS


Blue


Grey


Charcoal


Chestnut


Dark Grey


Green


Red

Standard and custom colors available. Please see the Resuflor Standard Industrial Color Card for details or envision a color in your space using our Flooring Visualizer Tool at floorvisualizer.sherwin-williams.com. This reproduction approximates the actual color. Factors such as the type of product, degree of gloss, texture, size and shape of area, lighting, heat or method of application may cause color variance. Contact our Sherwin-Williams representative for details.

ABOUT CHEMICAL RESISTANCE

Sherwin-Williams High Performance Flooring offers a broad range of systems to accommodate nearly every industrial, commercial and institutional setting. Each flooring system includes a standard chemical-resistant topcoat or surface proven to perform under typical conditions.

Important considerations:

- The combination of cleaning solutions, sanitizing chemicals, processing substances and products found in any operational setting is unique.
- Knowing exactly which materials are present — as well as their concentrations and typical exposure times before cleanup — is critical for proper flooring system selection.
- During the specification process, a flooring system's standard chemical-resistant topcoat may get replaced with one better suited to unique facility conditions.

The ability of a flooring system to perform as designed relies heavily on proper selection. Matching each use case with the right chemical-resistant flooring is key to having a facility looking great and functioning at peak level over the long term.

See our Chemical Resistance Guide and other technical resources on our website. Connect with a Sherwin-Williams High Performance Flooring expert for help with specifying an optimal flooring system for your facility.

TYPICAL PHYSICAL PROPERTIES

Hardness (Shore D), ASTM D-2240	65 D
Compressive Strength, ASTM C-579	9,000 psi
Tensile Strength, ASTM D-638	4,200 psi
Impact Resistance, ASTM D-3134	Pass
Flexural Strength, ASTM D-790	5,076 psi
Abrasion Resistance CS-17 Wheel 1000 GM Load 1,000 Cycles, ASTM D-4060	30 mg loss
Static Coefficient of Friction*, ANSI B101.1	> 0.6
Dynamic Coefficient of Friction - Wet*, ANSI A326.3	> 0.42
VOC Content	0 g/L
Indoor Air Quality	CA 01350 Compliant
Water Absorption, ASTM D-570	0.04%

*Sherwin-Williams High Performance Flooring systems can be built to meet or exceed the requirements of Static or Dynamic Coefficient of Friction testing per installation. Contact your Sherwin-Williams territory sales manager or tech representative for more information on alternative textures, grit/grip additives, or smooth coatings for your specific environment. A sample should always be obtained and tested prior to purchase for any non-slip flooring system.

THE SHERWIN-WILLIAMS DIFFERENCE

Sherwin-Williams High Performance Flooring delivers world-class industry subject matter expertise, unparalleled technical and specification service, and unmatched regional commercial team support to our customers around the globe.

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High Performance Flooring
PM-1530952-08 11/24

POLY-CRETE® SLB

The following information is to be used as a guideline for the installation of the POLY-CRETE SLB flooring system. Contact the Sherwin-Williams Technical Service Department for assistance prior to application.

APPLICATION INFORMATION — SURFACE PREP PROFILE CSP 3-4

VOC MIXED	APPLICATION STEP	MATERIAL	MIX RATIO	THEORETICAL COVERAGE PER COAT	PACKAGING
0 g/L	Primer	Poly-Crete TF	A, B & C unit	90 sq ft/unit	0.80 gal/unit
0 g/L 0	Basecoat	Poly-Crete SL Flintshot Quartz	A, B & C unit To Excess	40-42 sq ft/unit 800 lbs/1000 sq ft	3.125 gal/unit 50 lbs
0 g/L	Topcoat	Poly-Crete Color-Fast	Small & Large Units	100 sq ft/Sm - 200 sq ft/Lg	Sm 1 gal - Lg 2 gal

For additional topcoat options, contact your Sherwin-Williams Representative.

IMPORTANT!

Read these instructions carefully several days prior to starting your work. Seek answers to any questions you may have before you begin. Sherwin-Williams HPF maintains a Technical Staff that will be glad to answer your questions and give you advice pertaining to your particular installation. Large areas will require two or more mixers.

POLY-CRETE SLB is a 100% solids aromatic cementitious urethane system with a broadcast aggregate. This system is installed at 3/16" thick. POLY-CRETE SLB uses a natural quartz aggregate. **NOTE:** Do not apply at a temperature below 60°F (15°C) or above 85°F (29°C).

STORAGE CONDITIONS

POLY-CRETE SLB must be stored dry. Exposure of the aggregate to moisture for an extended period will cause lumps. Do not allow resins to freeze. Frozen (crystallized) hardener must be heated above 100°F to melt crystals. Both the POLY-CRETE SL Aggregate and Hardener have a 6-month shelf life. POLY-CRETE SL Resin has a 12-month shelf life.

SURFACE PREPARATION

Surface should be profiled, clean, dry, oil free and sound; Shot Blasting is the preferred preparation method. Please refer to the master Surface Preparation Guide on our website for more information. Never feather edge POLY-CRETE SLB, always terminate in keyway groove at doorways and exposed edges. Refer to architectural drawings for details. Do not apply at temperatures below 60°F or above 85°F.

NOTE: For each application of material and before mixing, mark your batches to ensure you achieve your spread rate targets. This is best accomplished by dividing your target spread rate by the width of the area being coated (or your planned wet edge). Example: If your spread rate is 100 sq. ft. and your area is 20 feet wide, you would make a mark every 5 feet (100 divided by 20 = 5).

MIXING AREA

Select a convenient mix area as close as possible to the application area and protect the surface from spillage by covering with a layer of cardboard and/or a sheet of plastic. Be generous with the amount of space allocated for this function. Do not mix this product in direct sunlight or when temperatures exceed 80°F. Exposure to high temperatures will greatly reduce the working time of this product. **DO NOT MIX UNTIL READY FOR IMMEDIATE USE.**

JOINT GUIDELINES

Refer to the Joint Guidelines for complete details on our website.

PRIMER

Priming or sealing of the substrate is typically not required; however, substrate must be primed with POLY-CRETE TF PLUS when broadcasting F60 aggregate or if the substrate is very porous (allow to cure a minimum of 6 hours @ 70°F) to prevent resins from being absorbed prematurely by substrate.

APPLICATION METHOD

POLY-CRETE SLB is applied by ½" V-notched squeegee method, and is typically applied at a thickness of 1/8". With broadcast and topcoat, POLY-CRETE SLB has a nominal finished system thickness of 3/16". Lay out installation in sections to allow full width to be finished in 15 minutes (@ 70°F) or less to assure absence of placement lines.

A. POLY-CRETE TF PLUS is supplied in pre-measured units consisting of one pail of resin, one pail of hardener and one bag of aggregate (powder). Pour the POLY-CRETE TF PLUS resin into a 2-gallon pail; scrape bottom and sides with a mix stick to assure that all material is transferred to the mix bucket. Use the POLY-CRETE pail to scrape the mix stick, never scrape mix stick on the side of the mix pail. Measure 1/4 oz. of POLY-CRETE HF ACCELERATOR and add it to the mix bucket. Pour the entire POLY-CRETE TF PLUS hardener into the center of the mix bucket. Using a ½" 750 RPM drill with a 4" dispersion blade, mix the resin and hardener for 30 seconds. Slowly add the POLY-CRETE TF PLUS aggregate to the resin and hardener and mix at 750 RPM for 1 minute. **PRODUCT MUST BE MIXED WITH A 4" DISPERSION BLADE AND A ½" VARIABLE SPEED 750 RPM DRILL. *DO NOT ADD HARDENER TO RESIN UNTIL BATCH IS READY FOR MIXING*. *FAILURE TO ADD ALL POLY-CRETE TF PLUS POWDER WILL RESULT IN IMPROPER CURE OF MATERIAL***

B. Pour the entire batch in two 4"-6" ribbons along the starting point.

C. Using a 3" chip brush, cut in along edges, drains and doorways.

D. Roll the material with an 18" 3/8" nap roller at 40 to 60 SF/kit depending on substrate texture and porosity.

E. Cross roll the material to remove any puddles and achieve a uniform thickness. Allow to cure for 4 hours @ 70°F before proceeding to the next application.

BASECOAT

A. POLY-CRETE SLB is supplied in pre-measured units consisting of one pail of resin, one pail of hardener and one bag of aggregate (powder). Pour resin into a 5-gallon pail; scrape bottom and sides to assure that all pigment is transferred. (If using POLY-CRETE NATURAL SL with pigment, add the pigment to the resin and hardener.) The resin and hardener should be pre-blended for approximately 30 seconds. A 4" dispersion blade is recommended for this product together with a high speed drill 750 rpm minimum to shear the cement-based aggregate into the system and avoid lumps. Gradually add aggregate until a homogeneous mix is attained (Approximately 1 minute). THOROUGH BLENDING IS MANDATORY. A properly mixed batch applies easier and has a uniform surface appearance. Incomplete mixing will cause an inconsistent finish or possible blistering. Have three mixing buckets that are rotated to assure minimum time between mixes. To avoid irregular curing or blisters, regularly clean the mixing blade and pail to avoid combining fresh material with older batches. Material should be applied directly onto the wet edge immediately after mixing.

B. When applying on level or surfaces sloped up to ¼"/foot, the product is used as supplied. For more steeply sloped surfaces such as ramps that are up to 3/4"/foot, adding 3 quarts of Q11 (QRok #3) to each mix will prevent sagging while still providing a uniform surface after loop rolling.

C. Pour the entire batch onto the floor and spread with an 18"x ½" V-notched squeegee. To avoid transition lines between mixes, it is very important that the material is poured directly onto the wet edge.

D. Trowel edges, drains and around equipment supports with an even pressure and a low-angle trowel in a sweeping motion to complete troweling. This ensures that new batches of material are blended together with no transition lines for continuity of finish.

E. Immediately roll and then cross roll with an 18" loop roller to eliminate lines and help release air.

F. Loop Rolling must be completed immediately after leveling of material to eliminate any residual roller marks in the finished surface (Within 12 minutes of mixing at 70° F).

G. The aggregate must be broadcast UP into the air while dispersing evenly and vertically at an approximate rate of 0.8 pounds per sq. ft. into the wet surface (0.5 lbs. for F-60). **Wait approximately 15 minutes before broadcasting into POLY-CRETE SL to ensure air has been released. Broadcasting too quickly will result in air entrapment.** Do not loop roller areas that have been broadcast.

The time window at which SLB is broadcast is extremely critical:

- **At 80°-90°F, you have 20 minutes in which to finish the broadcast.**
- **At 70°- 80°F, you have 25 minutes in which to finish the broadcast.**
- **At 55° - 65°F, you have 30 minutes in which to finish the broadcast.**
- **Too early and the surface may become uneven.**
- **Too late and the aggregate may not penetrate into the matrix surface.**
- **Allow to cure for a minimum of 8 hours (@ 70°F). Remove excess aggregate by brush (Do not sand).**

PREPARATION OF PLYWOOD FOR APPLICATION OF POLY-CRETE SLB

1. Plywood should be new and free of contamination (clean and dry). Marine grade plywood is recommended.
2. Installations over existing concrete or substrates with a possible chance of moisture contamination transfer should be isolated using a polyethylene vapor barrier; all joints should be taped according to manufacturer's instructions. Raised platforms should have consideration for airbricks in outside walls to reduce the risk of excessive dampness.
3. It is recommended that 2 layers of plywood be installed offset at joints to reduce flexing between joists. Plywood should be at least ¾" thick.
4. Plywood should be positively fastened with high-quality construction adhesive and recessed screws at 6" on center screw pattern.
5. Bandage joints using a mixture of RESUFLOR EOC 100% solids epoxy and NO SAG #1, embedding a minimum of 8" of close weave fiberglass matting into the wet resin.
6. All key ways should be installed by using a Skil® type saw with a ¼" wide blade set to ¼" deep (Concrete diamond cutting blades will burn and not cut wood).
7. Any drain detail must be keyed a minimum 2" away from the drain edge with the outside exposed edge removed to a slope using a wood chisel. Doorway thresholds should be treated in a similar way to allow a smooth transition for the termination of the material.
8. Detail such as cold joints should also be cut using a Skil saw detail as per concrete CAD drawing detail.
9. Plywood should be thoroughly vacuumed prior to installation.

TOPCOAT INSTRUCTIONS

POLY-CRETE COLOR-FAST, POLY-CRETE TF PLUS, RESUFLOR GLAZE, RESUFLOR 3741, ACCELERA or RESUFLOR GLAZE SHOP FLOOR WITH ARMOR TOP is used to topcoat POLY-CRETE SLB systems. Refer to their respective Product Data Sheets and/or Application Instructions for application details.

CURE

Allow a minimum of 8 hours cure before light foot traffic at 70°F, and a minimum of 24 hours is required at 50°F. Additional time must be allowed for heavier loads or lower temperatures. Contact the Sherwin-Williams High Performance Flooring Technical Department for more information.

IMPORTANT!

Before using Sherwin-Williams High Performance Flooring products, read and understand their accompanying Safety Data Sheet.

STANDARD TERMS AND CONDITIONS OF SALE, INCLUDING STANDARD WARRANTY APPLY - VISIT **industrial.sherwin-williams.com/na/us/en/resin-flooring** FOR THE LATEST VERSION.

CAUTION! As with all chemical products, individuals may have different reactions to exposure to specific products. This is dependent upon many factors, including the individual's personal characteristics, the size of the installation, the ventilation available, the intensity of the exposure or the length of the exposure. Individuals may experience discomfort during the installation process of one product, but not another.

In some cases this is experienced as a skin irritation and in others it is experienced as an inhalant irritation. Typically, it disappears once the exposure is eliminated. In some cases people can become "sensitized" to a product and experience the discomfort every time there is exposure without Personal Protective Equipment ("PPE").

To protect yourself from various exposures or discomfort during the mixing and application of our products, we recommend covering exposed skin including using gloves, long sleeves, safety glasses and a respirator such as the 3M 8577 P95 Universal Disposable Carbon Respirator or a cartridge respirator.

Use only as directed. KEEP OUT OF REACH OF CHILDREN.

Do not reseal moisture-contaminated hardener. This will result in carbon dioxide generation or possible violent rupture of container.

THE SHERWIN-WILLIAMS DIFFERENCE

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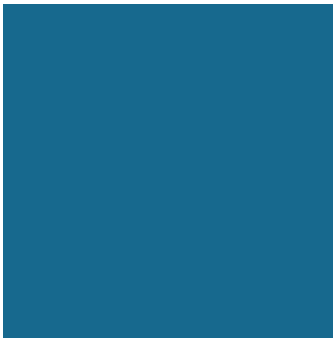
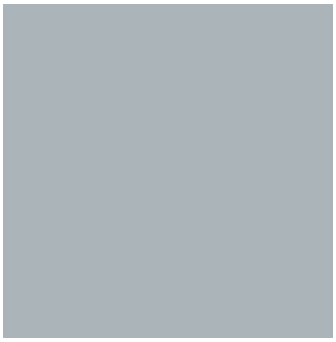
POLY-CRETE® COLORS

Poly-Crete MD, MDB, SLB and HF systems and Poly-Crete TF Plus topcoat feature a matte finish.
Poly-Crete Color-Fast topcoat features a semi-gloss finish and UV stability for color retention.

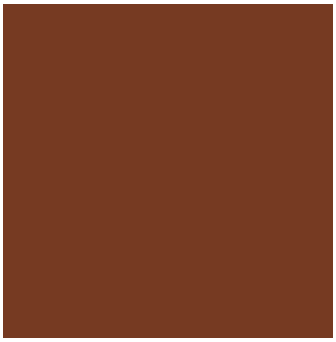


Blue*



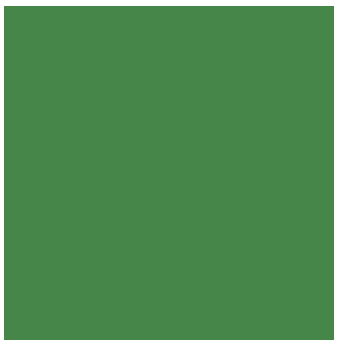
Grey

Charcoal

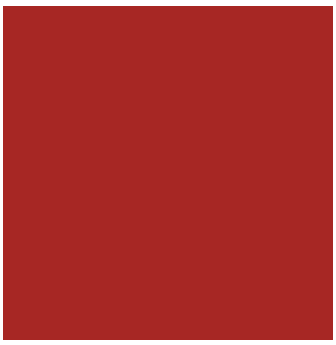


Chestnut

Dark Grey



Green*



Red

NOTE: Differences in chemical composition, thickness, application methods and jobsite conditions may cause slight variations of individual colors across various products. Colors may also be affected by age, heat and exposure to ultraviolet light from natural sunlight and overhead lighting (no-UV stable products). Sherwin-Williams HPF recommends obtaining an actual color sample for best representation.

*Poly-Crete Color-Fast in these colors requires a grout coat of Poly-Crete TF Plus to ensure consistent color.

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GUIDELINE INSTRUCTIONS FOR CONCRETE SURFACE PREPARATION (FORM G-1, REVISED 04/25)

INTRODUCTION

The following concrete surface preparation guidelines serve as an aid to owners, design professionals, specifiers and contractors. All surfaces to receive Sherwin-Williams High Performance Flooring sealers, coatings, mortars and resurfacers must be structurally sound and clean. Proper surface preparation is an extremely important factor in the immediate and long-term successful performance of applied polymer floor or wall systems.

The contractor responsible for the installation of the polymer system shall be provided a substrate that is clean, durable, flat, pitched to specifications and free of surface contaminants. Providing the properly prepared substrate is the responsibility of the owner, the owner's appointed representative and the concrete contractor, unless specifically stated otherwise.

PROPER SURFACE PREPARATION

Proper surface preparation includes the following:

1. Inspection of the concrete substrate
2. Removal and replacement of non-durable concrete
3. Decontamination of the concrete surface
4. Creation of surface profile
5. Repair of surface irregularities

1. **Inspection of the concrete substrate** to determine its general condition, soundness, presence of contaminants, presence of moisture vapor emissions and the best methods to use in preparation of the surface to meet the requirements of the owner or the owner's appointed representative is critical. A proper evaluation will lead to the selection of the proper tools and equipment to accomplish the objective.

2. **Removal and replacement of non-durable concrete** must be accomplished prior to installation of the polymer system. Localized weak or deteriorated concrete must be removed to sound concrete and replaced with either cementitious or polymer concrete repair mortars or an engineered concrete mix design. For application of these systems and compatibility with the selected polymer sealer, coating, lining or topping, refer to the appropriate application guide or the Technical Service Department. Occasionally, plain fresh concrete is required and must be bonded to existing concrete. When bonding fresh concrete to existing, prepare the existing concrete surface by scabbling, scarifying, abrasive (sand) blasting, needle scaling, high-pressure water jetting (5,000-45,000 psi), or steel shot blasting. Apply a low modulus epoxy as the bonding agent at a rate of 80 square feet per gallon for a WFT of 20 mils, and then place the fresh concrete or mortar. Bonding to lightweight concrete may require a second coat of epoxy if the first coat is readily absorbed into the concrete surface. Always place the fresh concrete within the open time of the epoxy, while the epoxy-bonding agent is still wet. Rough concrete surfaces will require additional material depending on the surface profile. Fresh concrete should have a low water/cement ratio (w/c) not to exceed 0.40. When bonding fresh concrete containing latex polymer admixtures, check compatibility of the latex modified concrete mixture by either installing a test patch and performing a pull-off test, or by conducting a slant shear test in accordance with ASTM C882 in an independent concrete testing laboratory.

3. **Decontamination of the concrete surface** requires the removal of oils, grease, wax, fatty acids and other contaminants, and may be accomplished by the use of detergent scrubbing with a heavy duty cleaner/degreaser, low-pressure water cleaning (less than 5,000 psi), steam cleaning or chemical cleaning. The success of these methods is dependent upon the depth of penetration of the contaminant, which is completely dependent upon the contaminant's viscosity, the concrete's permeability and the duration of exposure. Special care should be taken when preparing concrete at an "in use" facility for repair, replacement or an initial floor topping. This is especially true for food processing facilities. Contaminants can be carried into exposed concrete, as most of these facilities use copious amounts of water. The contaminants can be animal fats/oils, blood, cleaning solutions, microbes, etc. They may not be completely removed during preparation (shot blasting or grinding) even though the concrete may appear clean and well profiled.

   A simple method to ensure you have sound concrete is to test the pH. The chemistry of concrete is alkaline in nature. Normal concrete should be in the range of 11-13. Most of the contaminants mentioned are neutral to acidic in nature. After preparation, test the floor in multiple locations using distilled water and the pH paper. If the pH is 10 or lower, additional preparation will be required to ensure a good bond. In areas where the contaminants cannot be removed, the contaminated concrete must be removed and replaced as in Step 2 above.

   Caution: Decontamination methods that introduce large amounts of water may contribute to moisture-related problems as referenced in APPENDIX A.

4. **Creation of surface profile** can be accomplished by a number of methods, each utilizing a selection of tools, equipment and materials to accomplish the intended purpose (See METHODS OF SURFACE PREPARATION below). Selection is dependent upon the type of surface to be prepared and the type of system to be installed. In addition, floors, walls, ceilings, trenches, tanks and sumps each have their own particular requirements. The type and thickness of the selected polymer system also plays an important role in the selection process. Regardless of the method selected or tools employed, we must provide a surface that will accept the application of polymer-based products and allow the secure mechanical bond of the polymer to the concrete. The type of service the structure will be subjected to will also help to define the degree of profile required. The surface profile is the measure of the average distance from the peaks of the surface to the valleys as seen through a cross-sectional view of the surface of the concrete.

   This dimension is defined pictorially and through physical samples in the ICRI Technical Guideline No. 310.2, and is expressed as a Concrete Surface Profile number (CSP 1-10).

   - For Sherwin-Williams High Performance Flooring coating and sealing applications from 4-15 mils in thickness, the surface profile shall be CSP 1, 2 or 3, typically accomplished through decontamination of the concrete surface as defined in Step 3 above, followed by acid etching, grinding or light shot blast.
   - For Sherwin-Williams Resuflor™ Topfloor and other coating applications from 15-40 mils in thickness, the surface profile shall be CSP 3, 4 or 5, typically accomplished through decontamination of the concrete surface as defined in Step 3 above, followed by light shot blast, light scarification or medium shot blast.
   - For Sherwin-Williams Resuflor Deco Quartz, Resuflor Topfloor SL23, Resuflor Topfloor SL12 SD, Resuflor Topcoat Metallic, Resuflor Aqua Topfloor, Resuflor Aqua MCS, Poly-Crete® SLB and other topping applications from 40 mils-1/8″, the surface profile shall be CSP 4, 5 or 6. These are typically accomplished through decontamination of the concrete as defined in Step 3 above, followed by light scarification, medium shot blast or medium scarification.
   - For Sherwin-Williams terrazzo systems, Resuflor Screed, Poly-Crete MD, Poly-Crete HF and other topping applications greater than 1/8″, the surface profile shall be CSP 5, 6, 7, 8 or 9. These are typically accomplished through decontamination of the concrete as defined in Step 3 above, followed by medium shot blast, medium scarification, heavy abrasive blast, scabbling or heavy scarification.

5. **Repair of surface irregularities** including bugholes, spalls, cracks, deteriorated joints, slopes, areas near transition zones such as around drains and doorways, etc., must be repaired prior to the placement of the polymer system and/or the system must be designed to offset the thickness of the irregularities. For removal and replacement information and materials, refer to Step 2 above. For bugholes and other minor surface irregularities, fill with epoxy quick patch Resuflor 3500, Resuflor 3513 Instant Patch Resin or the system resin mixed with a vertical grade aggregate. For treatment of cracks and joints, refer to the section below entitled "Crack Isolation." For additional questions, contact the Technical Service Department or your local sales representative for specific recommendations.

For specific applications, always consult Sherwin-Williams System Overviews, Application Guides, data sheets or a Technical Service representative.

METHODS OF SURFACE PREPARATION

Depending upon conditions of the concrete, one or more methods of surface preparation may be required. It is common for decontamination to precede mechanical preparation, and if necessary a second decontamination to follow.

The preferred methods for creation of a surface profile, including the removal of dirt, dust, laitance and curing compounds, are steel shot blasting, abrasive (sand) blasting or scarifying. The steel shot blasting or vacuum blasting process is commonly referenced by equipment brand names, such as Blastrac, Vacu-Blast, Shot-Blast, etc. Vertical and overhead surfaces, such as cove base, wall and ceiling surfaces, shall be prepared utilizing methods of grinding, scarifying, abrasive (sand) blasting, needle scaling, high-pressure water jetting (5,000-45,000 psi) or vertical steel shot blasting.

Caution: The use of high-pressure water jetting will introduce large amounts of water, which may contribute to moisture-related problems as referenced in APPENDIX A. The following table provides a guide for the degree of surface profile required for the coating or overlay to be applied and the preparation methods used to generate each profile.

APPLICATION	PROFILE	SURFACE PREPARATION METHOD
SEALERS	0-3 mils	Detergent Scrub Low-pressure Water Acid Etching (not recommended) Grinding
THIN FILM	4-10 mils	Acid Etching (not recommended) Grinding Abrasive Blast Steel Shot Blast
HIGH-BUILD	10-40 mils	Abrasive Blast Steel Shot Blast Scarifying

APPLICATION	PROFILE	SURFACE PREPARATION METHOD
SELF-LEVELING	50 mils-1/8 inch	Abrasive Blast Steel Shot Blast Scarifying
POLYMER OVERLAY	1/8-1/4 inch	Abrasive Blast Steel Shot Blast Scarifying Needle Scaling High/Ultra-High Pressure Water Jetting Scabbling Flame Blasting Milling/Rotomilling

Surfaces to receive the bonded polymer system must be inspected after the surface is prepared to ensure that the substrate is sound and structurally durable. Areas found to be unsound or non-durable must be removed and replaced as described in Step 2 above. Dust or other deleterious substances not removed after the initial surface preparation must be vacuumed, leaving the surface dust free and clean.

Other surface preparation methods are mentioned in **Additional Surface Preparation References** below.

CRACK ISOLATION

The performance of elastomeric products such as Resuflor 3555 or Resuflor EOC internally flexible epoxy requires a relatively uniform dry film thickness to resist drying shrinkage and thermal movement of the concrete while maintaining a seamless bridge or seal over the concrete. Therefore it is critical that all mortar splatter, protrusions, ridges, penetrations or sharp projections in the surface of the concrete be ground smooth or otherwise made smooth, in addition to the normal surface preparation outlined above.

Prior to application of an elastomeric system, control/contraction joints, construction joints and cracks should be sealed with the selected system flexible sealant, i.e., Resuflor 3580 joint and crack filler. This coating should extend a minimum of 6″ on either side of the joint or crack. The entire surface area should then receive the specified crack isolation system. Isolation and/or expansion joints should be detailed in accordance with the plans and specifications of an architectural or engineering design professional for the type of structure being considered. Consult the Technical Service Department for the proper selection and use of isolation materials and the potential use of fiberglass scrim cloth for additional crack bridging capabilities.

Note: Sherwin-Williams High Performance Flooring systems can be applied to a variety of substrates if the substrate is properly prepared. Preparation of surfaces other than concrete or steel, such as wood, concrete block, brick, quarry tile, glazed tile, cement terrazzo, vinyl composition tile, plastics and existing polymer systems, can be accomplished to receive bonded polymer sealers, coatings or toppings. For questions regarding a substrate other than concrete or steel, or a condition not mentioned in this Guideline, contact the Technical Service Department prior to starting the project.

ADDITIONAL SURFACE PREPARATION REFERENCES

Important and relevant information on surface preparation of concrete is available by referencing the following codes, standards and guidelines.

ADDITIONAL SURFACE PREPARATION REFRENCES	
AMPP	Association for Materials Protection and Performance, 800 Trumbull Drive, Pittsburgh, PA 15205, (412) 281-2331 • SSPC-SP 13 Surface Preparation of Concrete • SSPC-TU 2/NACE 6G197 Design, Installation, and Maintenance of Coating Systems for Concrete Used in Secondary Containment
ICRI	International Concrete Repair Institute, 38800 Country Club Drive, Farmington Hills, MI 48331, (248) 848-3809 • Technical Guideline No. 310.2, "Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays" Includes visual standards to act as a guide in defining acceptable surface profiles for the application of industrial coatings and polymer floor toppings. • Technical Guideline No. 03730, "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion"
ASTM	American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, (610) 832-9585 • ASTM D4258 "Practice for Surface Cleaning Concrete for Coating" • ASTM D4260 "Standard Practice for Acid Etching Concrete" • ASTM D4261 "Practice for Surface Cleaning Unit Masonry for Coating" • ASTM D4262 "Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces"

APPENDIX A: TESTING FOR MOISTURE VAPOR EMISSION FROM CONCRETE

Excess moisture in concrete can produce harmful effects of discoloration, interruption of the polymerization of products, and delaminating of non-permeable resinous systems. Sources of moisture fall into three distinct categories: moisture present at the surface prior to or during application, moisture within the concrete that attempts to escape during and after application and a distinct source of moisture in intimate contact with the concrete that provides a continuous supply of moisture. Avoiding moisture-related problems and understanding the options available for remediation once they occur is important. Detecting moisture in concrete may be accomplished by employing a number of methods briefly described below:

Relative Humidity Method BS 8201 and BS 5325 - These are British Standards that result in pass/fail of whether or not moisture is being emitted, but do not quantify the results. This is not a useful test.

Gel-B Bridge Test - This test measures electrical resistance of the concrete, but is dependent not only on the moisture content of the concrete, but also on the other constituents of the concrete. Calibration of the results obtained with this method depend on knowing the mix design of the concrete and the raw material used. At best it is a difficult interpretation.

Radio Frequency (Capacitance-Impedance) Method - This method relies on portable electronic moisture meters that transmit strong radio waves that are absorbed by water. Calibration of the results obtained with this method depends on knowing the mix design of the concrete and the raw material used.

Carbide-Acetylene Test - This destructive test tells us nothing about the relative movement of moisture out of the concrete. It only quantifies that the portions of concrete removed and tested contain a measured content of moisture.

ASTM F2170-02 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes - The test method, modeled after the process used in Europe for several years, requires drilling holes at a diameter of 5/8″ to a depth equal to 40% of the slab's thickness. The hole is then lined with a plastic sleeve, capped and allowed to acclimate for 72 hours. The probe is placed in the sleeve, allowed to equilibrate for 30 minutes, and then readings are recorded. **Acceptable relative humidity readings for substrates receiving non-permeable flooring are 80% or lower.** Testing should take place in an acclimated building and is required to equal three tests in the first 1,000 square feet, with one additional test per each additional 1,000 square feet of concrete slab surface. This test method is less subject to conditions occurring at the concrete surface that may influence calcium chloride test results. This method only defines existing moisture content of the sample and cannot address moisture vapor transmission.

ASTM D4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method - This qualitative method will indicate the presence of moisture movement, but it will not quantify the amount of moisture movement and is only useful in determining whether additional testing is required.

ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride Moisture Emissions Test - Originally developed by the Rubber Manufacturers Association, moisture vapor test kits use anhydrous calcium chloride to make a quantitative evaluation of vapor emissions from the concrete. To determine the amount of moisture movement, the floor and surrounding environment must be in the anticipated service condition. The test must be conducted over raw exposed concrete which has been exposed to the environment for at least 24 hours. A quantitative evaluation is conducted wherein the anhydrous calcium chloride container and contents are pre-weighed on a gram scale, allowed to remain in its container with the lid removed, and the container placed under a sealed dome to prevent loss of moisture for a period of 60-72 hours.

Three tests are required for the first 1,000 square feet, with one additional test for every 1,000 square feet or fraction thereafter. The container is removed and again weighed on a gram scale to determine the weight gain of the anhydrous calcium chloride. A calculation is performed to determine the amount of moisture absorbed. These results are quantified as the rate of moisture vapor transmission expressed as pounds per 1,000 square feet of surface area per 24 hours. Sherwin-Williams High Performance Flooring has adopted a commonly accepted value for application of polymer coatings or toppings to be not more than 3 pounds of moisture per 1,000 square feet per 24 hours.

Moisture content and moisture movement are merely snapshots in time of dynamic conditions within the concrete. Moisture vapor movement is dependent upon the relationship between temperature and humidity of the two adjacent environments — in this case, the internal environment of concrete and the external environment of the air surrounding the concrete. Any change in temperature and/or moisture content of either will result in a change in vapor pressure and the attempted movement of moisture vapor into or out of the concrete as referenced below.

It is the combination of temperature and humidity (called vapor pressure) that determines the direction of moisture movement. Moisture will move from a higher vapor pressure to a lower vapor pressure. When there is air movement over the surface of the concrete, moisture will attempt to move out of the concrete toward the area of air movement. For these reasons, it is important to measure the temperature and relative humidity during the test period. The Moisture Vapor Test Kit values will not be useful in predicting possible problem areas unless the tests are conducted in the environment in which the structure will be used. The air temperature and humidity around the concrete during the test should be the same air temperature and humidity that will be in place during the useful life of the structure. Contact the Technical Service Department if there are any questions concerning the use of the test kits or interpretation of the results.

To successfully and predictably reduce moisture vapor emission rates, apply one of the following remediation systems:

- Poly-Crete SLB
- Resuflor Aqua MCS
- Resuprime™ MVB, MVP, MVP3

Consult with the Technical Service Department for specific recommendations and utilize in accordance with application instructions. For slabs with potential moisture issues, utilizing systems that are designed to accommodate moisture movement from the slab such as Poly-Crete SLB, Resuflor Aqua and Resuprime MVB, MVP or MVP3 may be the most cost-effective alternative. Whenever moisture issues present themselves on a project, document the conditions, inform the owner representative and consult with Sherwin-Williams High Performance Flooring Technical Service personnel.

Note: The industry standard for curing concrete is 28 days. This is usually sufficient to allow excess moisture to leave a concrete slab. To minimize moisture-related disbondment, new concrete should be allowed to cure 28 days before installation of Sherwin-Williams High Performance Flooring non-permeable resinous flooring systems. If any doubts exist concerning moisture in the slab, Calcium Chloride and/or Humidity tests should be run to document the presence of moisture.

DEW POINT CALCULATION CHART (FAHRENHEIT)

% RELATIVE HUMIDITY	AMBIENT AIR TEMPERATURE °F										
	20	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**110**	**120**
90	18	28	37	47	57	67	77	87	97	107	117
85	17	26	36	45	55	65	75	84	95	104	113
80	16	25	34	44	54	63	73	82	93	102	110
75	15	24	33	42	52	62	71	80	91	100	108
70	13	22	31	40	50	60	68	78	88	96	105
65	12	20	29	38	47	57	66	76	85	93	103
60	11	19	27	36	45	55	64	73	83	92	101
55	9	17	25	34	43	53	61	70	80	89	98
50	6	15	23	31	40	50	59	67	77	86	94
45	4	13	21	29	37	47	56	64	73	82	91
40	1	11	18	26	35	43	52	61	69	78	87
35	-2	8	16	23	31	40	48	57	65	74	83
30	-6	4	13	20	28	36	44	52	61	69	77

TESTING

Testing for an Existing Sealer

Test to see if the floor is "sealed" by using the Water Break Test; please refer to ASTM 3191. If the poured water forms into droplets, then an existing sealer and/or paint may exist on the surface and must be removed by diamond grinding, steel shot blasting or other mechanical methods.

Salt Contamination Testing

Salt contaminated slabs that contain steel reinforcement are very susceptible to corrosion of the reinforcing steel. As the steel corrodes, it expands, causing cracking, delamination of concrete and any toppings bonded to it, and eventually, structural failure of the slab. Obvious signs of chloride or salt contamination are spalled concrete with exposed, rusted, reinforcing steel.

METHODS OF SURFACE PREPARATION

Diamond Grinding

Diamond grinding is another preferred choice for preparing concrete for polymer floor systems. Diamond grinders are floor grinders equipped with diamond abrasives. With multiple grit options available, they are capable of achieving a wide range of concrete surface profiles appropriate for most resinous flooring systems. Additionally, diamond grinding is used for mechanically profiling and removing existing coatings and adhesives. Immediately after diamond grinding, vacuuming is required to remove all dust from the substrate.

Hand Tool

Hand tool preparation consists of the use of mechanical tools and equipment designed to abrade or chip away the surface of the concrete. Common tools available include chipping hammers, handheld diamond grinders and concrete crack chasing saws. These tools are typically used to make keyways and prepare edges against walls and columns.

TYPES OF SUBSTRATES

Fiber-Filled Concrete

Fiber-filled concrete must be burned with a propane weed burner, swept and vacuumed perfectly clean, and then primed. When primer has completely cured, the floor must be sanded and tack ragged (This step may not be necessary for thick resurfacing systems).

Quarry/Ceramic Tile

Quarry/ceramic tile have been successfully resurfaced on many projects without the removal of the tile and setting bed. A site investigation along with cores through the entire slab will help identify the type of setting bed, the existence of any waterproofing membranes, additional toppings, or other unusual existing conditions. Water trapped within the floor will create long-term sanitation and performance problems.

If the tile is well bonded and placed over an unsaturated latex setting bed, the floor may be resurfaced. Please consult with a Sherwin-Williams Technical Service Representative to determine appropriate mechanical surface prep method, fillers and products.

Existing Epoxy Coating/Resurfacer

Existing seamless floors may be resealed or resurfaced from time to time due to excessive wear, or the need to change the appearance or skid resistance of the floor. The existing floor should first be cleaned and degreased with either EZ-Clean floor cleaner/degreaser or Simoniz 969 cleaner. It must then be mechanically abraded to totally remove the gloss and vacuumed perfectly clean. “Tack rag” area to remove remaining dust. Consult your Technical Service Manager to determine the best preparation for the individual coatings.

Plywood

The plywood substrate must be sound and non-flexing under the expected load. Typical plywood substrate must be exterior or marine grade, new, clean and smooth finish (NO KNOTS). Two layers with staggered joints are required. Plywood should be positively fastened to the existing surface with a high-quality construction adhesive as well as a 6″ screw pattern. For further information on plywood substrates, please contact your local sales representative or Sherwin-Williams technical department.

WALLS

For Resuwall applications:

Block Wall

Apply Block Filler to fill pores over new or existing concrete block, following the application instructions.

Drywall

Drywall must be finished to a level #5 paint-ready finish prior to coating. Prime with Extreme Bond Primer. Substrate will affect final appearance of wall coating.

NOTE: Resuwall products require preparation in order to perform as expected. Substrates must be clean, sound and dry. If installing over substrates other than block wall or drywall, please consult the Sherwin-Williams Technical Service Department.

SHERWIN WILLIAMS® | HIGH PERFORMANCE FLOORING

FLOOR EVALUATION GUIDELINES

Flooring problems on concrete from vapor emission, dew point, alkalinity, pH, etc., cause millions of dollars in repair and replacement costs annually. By recognizing potential problems, testing for and mitigating them, steps can be taken to ensure a long-lasting, successful flooring installation.

WHAT IS MOISTURE VAPOR EMISSION?

Water is added to turn cement, sand and aggregate into a concrete slab. There is a critical volume of water needed to "hydrate" the concrete and an excess volume of water used to make the concrete pourable and workable. It is this excess that can emit from the slab. Moisture is also a concern when the concrete slab has no vapor retarder installed, or the vapor retarder has been punctured.

HOW DOES MOISTURE MOVE THROUGH THE SLAB?

Capillary Moisture

Ground water touches the bottom of the concrete slab, and wicks into the concrete through microscopic bleeder water channels until it reaches the coating surface. As the water comes through the slab, it brings calcium/sodium salts with it; this can degrade the bond line and cause the coating to delaminate.

Osmotic Moisture

Actual water vapor transmission through the concrete slab condenses again at the bond line and causes the same problem as in the capillary moisture case. This can happen when the water table is far below the slab with an improperly installed or missing vapor retarder. Three conditions are needed for osmosis to occur: a semi-permeable membrane, which can be the polymer primer or the upper layers of the slab; a gradient of ionic activity (soluble salts, which are indigenous to concrete); and a source of moisture vapor. If any one of these three things is removed, osmosis cannot occur.

Hydrostatic

The surrounding water table is higher than the concrete slab on grade. Because water seeks its own level, it is forced through the slab under pressure. This type of water pressure is not the usual cause of coating failure.

The volume of moisture that can pass through a slab depends on the porosity of the slab. Porosity is a direct result of the water/cement ratio in the concrete mix design. As the water/cement ratio increases, the porosity of the concrete increases exponentially.

WHAT IS THE TRADITIONAL FAILURE MODE BECAUSE OF "MOISTURE" PROBLEMS?

There are two ways a polymeric floor can fail:

1. The floor system was never able to bond properly at the time of installation.
2. There were factors present at the time of installation to cause the bond to fail. Symptoms of failure on an already installed floor may include bubbles, blisters and/or delamination.

WHAT CAUSES A POLYMERIC FLOOR TO FAIL?

Specific ionic components of the surface chemistry of the slab (the top 0 - 3/16" [5mm]), past a certain threshold, can cause a failure to occur. Moisture failures such as capillary action, hydrostatic pressure and osmotic blistering can also occur.

Concrete defects resulting from alkaline-silicate reaction (ASR) or alkaline-aggregate reaction (AAR) within the slab may also contribute to floor failure. Sherwin-Williams High Performance Flooring recommends all concrete be tested for quality by a licensed petrographer.

HOW DO I TEST MY FLOOR?

Sherwin-Williams High Performance Flooring has developed a chart to assist you with identifying the moisture limits for each type of Sherwin-Williams flooring system. If you are planning to use our Epoxy or MMA, Sherwin-Williams recommends using in-situ Relative Humidity (RH) Testing per ASTM F-2170 as a quantitative test method. In-situ RH is the preferred method as it is not significantly impacted by ambient temperature and relative humidity conditions in the building, and thus likely to provide more accurate readings. Calcium chloride (CaCl) testing is not recommended for moisture testing as results will differ based on the environmental factors at time of testing.

In cases where a product can tolerate high levels of moisture such as Poly-Crete®, Hybri-Flex® or Resuprime MVP, Sherwin-Williams High Performance Flooring may recommend that cores be taken and analyzed to determine the levels of ionic components (salts) in the slab. Sherwin-Williams High Performance Flooring offers in-house core testing using ion-chromatography technology. Refer to the Sherwin-Williams High Performance Flooring Core Analysis Program on our website for more information.

Note: Test results from cores taken after osmotic blistering has already occurred may not be accurate due to the ionic components transferring from the substrate to the blisters.

SHERWIN-WILLIAMS HIGH PERFORMANCE FLOORING FLOOR MOISTURE LIMITATIONS

	RESUFLOR	ACCELERA	CRYLAFLOR	VENT-E	RESUPRIME MVP PRIMER	RESUPRIME MVP3 PRIMER	POLY-CRETE & HYBRI-FLEX
RH % MAXIMUM (ASTM F-2170) Recommended Test Method	80%	80%	85% (with bond test)	99%	99%*	99%*	99%*
CACL MAXIMUM LBS. PER 1,000 SF PER 24 HOURS (ASTM F-1869)	3	3	5 (with bond test)	N/A	20*	24*	20*

***Poly-Crete, Hybri-Flex and Resuprime MVP Primers**

Old Concrete (>1 yr. old)

Core analysis testing is recommended to rule out the potential for osmotic blistering caused by higher than normal levels (see next page) of soluble ion (salt) deposits at or near the surface. Refer to the Sherwin-Williams High Performance Flooring Core Analysis Program.

New Concrete (<1 yr. old)

Core testing is not required if NO concrete curing compounds, hardeners or densifiers were used. The use of any of these products may cause soluble ion (salt) deposits at or near the surface to exceed normal levels (see below), potentially producing conditions for osmotic blistering. In these cases, Sherwin-Williams recommends a core analysis to determine if these levels are suitable for an installation. Refer to the Sherwin-Williams High Performance Flooring Core Analysis Program.

The following data is based on testing of a concrete substrate profiled per G1 Concrete Surface Preparation Guidelines and free of any contaminants that could increase levels of the soluble ions listed. This data is to be used as a guide only. Please contact your local Sherwin-Williams High Performance Flooring Territory Sales Manager or the Sherwin-Williams High Performance Flooring Technical Service Department for a thorough analysis of your results.

NORMAL SOLUBLE ION LEVELS IN SUBSTRATE (PARTS PER MILLION)	
Sodium (Na)	~200-800 ppm
Potassium (K)	~200-800 ppm
Chloride (Cl)	~10-100 ppm
Sulfate (SO_4)	~1500-5500 ppm

PRE-INSTALLATION ACCEPTABLE SOLUBLE ION LEVELS IN SUBSTRATE BY PRODUCT (COMBINED NA, K, CL)	
Epoxy, Resuprime MVP, MMA, Accelera®	1600 ppm
Resuprime MVP3	2400 ppm
Poly-Crete® SLB, MD, HF (with topcoats) Hybri-Flex® E, M or A	3200 ppm
Vent-E	4800 ppm
Poly-Crete MD, HF (no topcoats)	4800 ppm

In all cases, Sherwin-Williams High Performance Flooring products must be applied as per Sherwin-Williams High Performance Flooring Application Instructions on structurally sound and clean areas in which the concrete meets acceptable industry standards as defined in ACI Committee 201 Report, "Guide to Durable Concrete." Sherwin-Williams shall not be liable for bond failures caused by deficiencies in the substrate including, but not limited to, the presence of ionic compounds or soluble salts, alkali silicate reaction, alkali aggregate reaction, shale-pop, and other expansive reactions of aggregates and reinforcements. Sherwin-Williams recommends all concrete be tested for quality by a licensed petrographer.

RESIN FLOORING CHEMICAL RESISTANCE GUIDE

	BROADCAST SYSTEMS			EPOXY COATINGS													URETHANE COATINGS					POLYASPARTIC/ FAST CURE COATINGS				URETHANE CONCRETE		ACRY-LICS
	RESUFLOR™ TOPFLOOR SL23	RESUFLOR® DECO QUARTZ DB23	RESUFLOR™ DECO FLAKE SB	RESUFLOR™ 3725	RESUFLOR™ 3555	RESUFLOR™ 3741 NOVOLAC	RESUFLOR™ 3746 SELF-LEVELING	RESUFLOR™ CRN NOVOLAC	RESUFLOR™ PT 250 TOPCOAT	RESUFLOR™ MPE MULTI-PURPOSE	RESUFLOR® GPE GENERAL PURPOSE	RESUFLOR® UVE UV-RESISTANT	RESUFLOR™ GARD	RESUFLOR™ GLAZE	RESUFLOR™ ULTRA	RESUFLOR™ VENT-E	RESUTILE™ 4638	RESUTILE™ 4685	RESUTILE™ HPS 100 AND HTS 100	RESUTILE™ SDS STATIC DISSIPATIVE	RESUTILE™ AT	ACCELERA™ 4850	ACCELERA™ 5	ACCELERA™ (REGULAR, EXT, LH)	ACCELERA™ ONE	POLY-CRETE (HF, MD, TF PLUS)	POLY-CRETE COLOR FAST	MMA COATINGS (CRYLAFLOR)
3M™ Stainless Steel	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	OK	TS	TS	TS
3M™ Duraprep	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	NR	SD	SD	TS	TS	NR	SD	TS	SD	TS	TS	SD	SD	SD	SD	SD
AC-103 - 100%	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	OK	OK	SD	TS	TS	TS	TS	TS	OK	TS	TS	SD	TS	OK	SD	OK
Acetaldehyde	TS	TS	TS	OK	SD	OK	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	SD	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS
Acetic Acid - 3%	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	OK	OK	OK	TS	TS	TS	TS	TS	OK	TS	TS	OK	TS	OK	OK	OK
Acetic Acid - 5%	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS	OK	OK	TS	OK	TS	TS	OK	TS	TS	TS	TS
Acetic Acid - 10%	SD	OK	OK	OK	SD	OK	SD	SD	SD	SD	SD	SD	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	TS	OK	OK	OK
Acetic Acid - 30%	SD	TS	TS	OK	SD	OK	SD	TS	TS	TS	TS	TS	SD	SD	OK	TS	SD	OK	TS	TS	SD	SD	TS	SD	TS	OK	SD	SD
Acetic Acid - 50%	SD	TS	TS	OK	SD	OK	SD	TS	TS	TS	TS	TS	NR	NR	NR	TS	SD	OK	TS	TS	SD	SD	TS	SD	TS	SD	SD	NR
Acetic Acid (50%) to Glacial (100%)	TS	TS	TS	SD	NR	SD	SD	TS	TS	TS	TS	TS	TS	TS	TS	TS	SD	SD	TS	TS	TS	SD	TS	TS	TS	TS	TS	TS

View Full Chemical Resistance Chart

The Chemical Resistance Guide can be found in its entirety at: https://industrial.sherwin-williams.com/content/dam/pcg/sherwin-williams/resin-flooring/na/us/en-us/pdfs/project-prep-docs/Flooring-Chemical-Resistance-Guide-SW.pdf

OK = Recommended for exposure not to exceed 72 hours prior to cleaning
*Requires additional considerations; contact Tech Service Department

SD = Splash/spillage daily
TS = Contact Tech Service Department

NR = Not recommended

MAINTENANCE RECOMMENDATIONS
GENERAL CLEANING & MAINTENANCE

Floors usually take the most abuse of any surface in the building. Floor maintenance is dependent upon the flooring system itself, the traffic conditions, and the type of dirt and debris to which it is exposed. Sherwin-Williams resinous floors are easily maintained because of their physical and chemical tough finishes.

In recognition of the need for regular floor maintenance, the following recommendations will help keep your Sherwin-Williams resinous floors looking like new. The recommended cleaning products and maintenance program is based on the type of floor you have.

RECOMMENDED CLEANING CHEMICALS

	AREA DESCRIPTION	RECOMMENDED CLEANER
FOOT TRAFFIC	Public areas, health care, dining room/cafeteria, lab, institutional, retail, foot traffic area	Neutral slip-resistant floor cleaner
LIGHT TO MODERATE SERVICE AREAS	Animal care, automotive service center, commercial kitchen/food prep area, patio	Cleaner/degreaser
MODERATE TO HEAVY SERVICE AREAS	Bottling plant, factory floor, loading dock, manufacturing/industrial, vehicular traffic area, stadium	Heavy-duty cleaner/degreaser
ESD/CONDUCTIVE FLOORS	Clean room, computer room, electronics production and assembly, quality control lab, surgery	Neutral floor cleaner
FOOD AND BEVERAGE PLANTS	Dairy plant, meat & poultry plant, food processing plant, brewery, winery and beverage plants	Cleaner/degreaser

CLEANING PROCESS

The best method to clean Sherwin-Williams flooring is a five-step process using the recommended cleaning product. The process varies between small and large floors, and between smooth and textured floors.

THE FIVE STEPS ARE:

- **Sweeping** - Always sweep the floor thoroughly before cleaning.
- **Application** - The means to put the cleaning product on the floor surface.
- **Agitation** - Movement of the cleaning product, with a piece of equipment, on the floor surface to aid in the release of foreign material.
- **Dwell Time** - Letting the cleaning product stand on the surface to allow time for emulsifying foreign material.
- **Removal** - Removing the cleaning product from the surface of the floor.

GENERAL CLEANING & MAINTENANCE

	SMOOTH FLOORING SURFACES		TEXTURED FLOORING SURFACES	
	SMALL AREA	LARGE AREA	SMALL AREA	LARGE AREA
SWEEPING	Broom or dust mop	Floor sweeper	Broom	Floor sweeper
APPLICATION	Synthetic mop or deck brush	Automatic floor scrubber	Deck brush or foamer/sprayer	Automatic floor scrubber or foamer/sprayer
AGITATION	Mop or deck brush	Automatic floor scrubber	Deck brush or rotary floor machine	Automatic floor scrubber or rotary floor machine
DWELL TIME	5-10 minutes	5-10 minutes	5-10 minutes	5-10 minutes
REMOVAL	Mop or wet vac	Automatic floor scrubber	Squeegee or wet vac	Automatic floor scrubber

Notes:

- Never use a mop to clean a floor that is greasy or oily.
- When using a deck brush, choose a medium/stiff bristle.
- When using a rotary floor machine, use a white, tan or red 3M pad or similar pad.
- When removing solution with a squeegee, use a soft, neoprene squeegee.
- Do not use a water spray to remove cleaning solution from the floor. It will over dilute the solution, causing greases and oils to fall back onto the floor surface.
- Through proper training and education, unnecessary wear of the floor, such as forklift spin and skid marks, can be avoided.
- Spills should be cleaned up immediately as a safety precaution as well as to prevent staining of the floor.
- Surfaces should be adequately protected when moving heavy equipment across the floor.

MAINTENANCE/DAMAGE PREVENTION

Sherwin-Williams resinous floors are installed with several basic types of finish coats including epoxy, polyurethane and acrylic.

Acrylic and polyurethane floors have exceptional mar and scratch resistance while epoxy finishes are harder and will scratch when subjected to abrasive dirt.

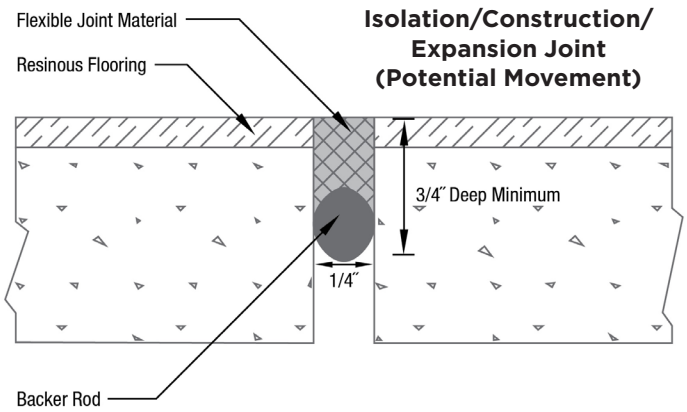
SHERWIN WILLIAMS® | HIGH PERFORMANCE FLOORING

JOINT GUIDELINES

The two basic joint types are Moving (dynamic) and Non-Moving (static).

MOVING JOINTS

Construction, Expansion and Isolation joints are considered moving joints. These allow horizontal and vertical movement between the slab and adjoining structures, such as walls and columns, helping to minimize cracking where the two meet.

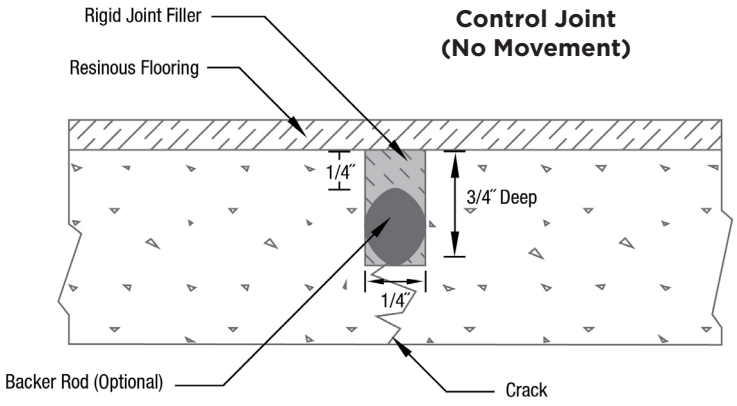


Prior to filling moving joints, Sherwin-Williams High Performance Flooring recommends “honoring” these joints by making a sawcut through the finished floor system at a minimum depth of ¾″ deep and ¼″ wide with a diamond blade saw attached to a vacuum. Refer to the joint sealant manufacturer’s product data sheet for the recommended depth. A bond breaker such as backer rod (closed cell) must be added to the bottom of the joint.

Potential cracking and/or stress/stretch lines (white lines) may occur on all resinous floor systems over or on either side of moving joints if the joints are not sawcut and properly filled. Also, if there is a variance of temperature of 20 degrees or more from the time the joint is filled and coated to its operational temperature, hairline cracking could occur even on non-moving joints.

NON-MOVING JOINTS

Control and/or Contraction joints are considered non-moving joints, which accommodate shrinkage and relieve internal stresses during the curing process of the concrete.

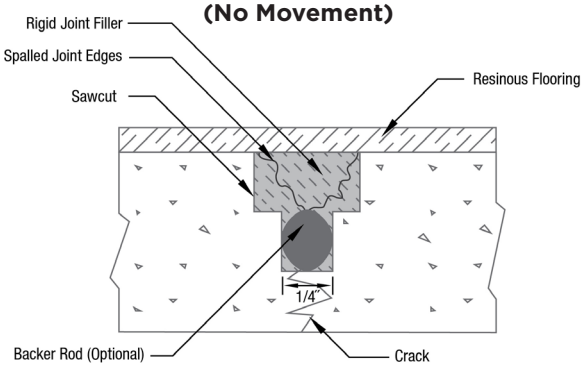


Prior to filling non-moving joints, be sure to prepare them by removing all laitance, debris and sealers to a depth of ¾″ deep and ¼″ wide with a diamond blade saw attached to a vacuum. A bond breaker such as backer rod (closed cell) may be added to the bottom. This will stop the joint material from seeping if the concrete is cracked through.

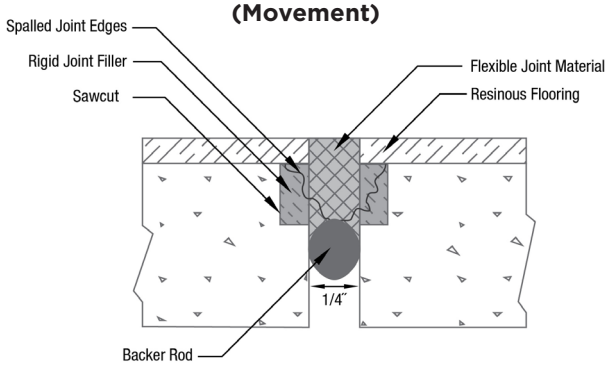
REPAIR OF DAMAGED/SPALLED JOINTS

Sawcut each side of spalled area and chip out the center with a chipping hammer or consider the use of a series of blades to reach the proper width. If using multiple blades, the center blade should reach the depth of the original joint and the outer blades should achieve a cut creating a "T" shape after cutting.

Repair of Spalled Joint Over 1/4" Wide (No Movement)



Repair of Spalled Joint Over 1/4" Wide (Movement)



INSTALLATION TIMING

The American Concrete Institute (ACI) recommends that filling of industrial floor joints be deferred 60-90 days after floor slab pour or as long as possible. This is to allow control and construction joints time to open closer to their ultimate width through the concrete shrinkage process (In freezer/cooler areas, floor should be stabilized at ultimate operating temperature for 7 days prior to installation).

Prior to treatment of joints, be sure to contact the facility's owner or manager to determine how long the concrete has cured as well as the location of moving and non-moving joints.

Refer to table below to determine which product is used where:

JOINTS	TYPE	BOND BREAKER	JOINT MATERIAL (1/4 INCH WIDE)	JOINT MATERIAL (OVER 1/4 INCH WIDE)
Moving (Dynamic)	Expansion/ Construction /Isolation	Backer Rod 1/8" wider than joint	Flexible joint material (Metzger/McGuire, VersaFlex or equivalent)	Flexible joint material (Metzger/McGuire, VersaFlex or equivalent)
Non-Moving (Static)	Control/ Contraction	Optional Backer Rod 1/8" wider than joint	• Epoxy flooring systems use Resuflor™ Glaze with Cab-O-Sil (No-Sag #2): Typical mix is 1 pint Resuflor Glaze hardener, 1 quart Resuflor Glaze resin, 3 quarts Cab-O-Sil (No-Sag #2) • Poly-Crete® flooring systems use Poly-Crete SL or MD to fill joint • MMA flooring systems use MMA SL Filler Mix • Vent-E flooring systems use Metzger/McGuire MM-80	• Epoxy flooring systems use Resuflor Glaze with Resuflor Screed III • Poly-Crete flooring systems use Poly-Crete MD or WR • MMA flooring systems use MMA SL Filler Mix or Cryl-A-Tex • Vent-E flooring systems use Metzger/McGuire MM-80

References:
ACI 224 "Joints in Concrete Construction"
ASTM Standards "C 1193 and C-920"
National Ready Mixed Concrete Association "Concrete in Practice"
Metzger/McGuire, Inc.
AMPP

SHERWIN WILLIAMS® | HIGH PERFORMANCE FLOORING

CRACK TREATMENT GUIDELINES

Similar to joints, cracks can be classified as static or dynamic and should be addressed in a similar manner as joints. Before treating, it is important to note what type of crack it is.

DYNAMIC CRACKS

Dynamic cracks, or active cracks, are any cracks for which the mechanism causing the cracking is still at work; any cracks that are still moving. If there is known movement or visible heaving, please contact a structural engineer before attempting repairs.

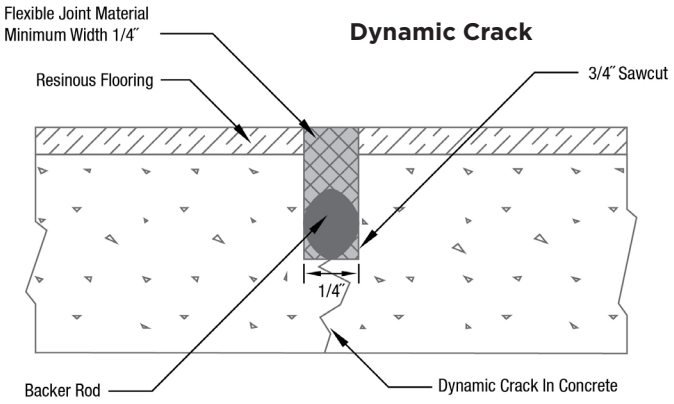
Examples of dynamic cracks are:

Settling/Structural Cracks may appear if the sub base of the slab shifts or settles after construction. These should be treated as moving joints and honored through the system.

Heaving Cracks are often a sign of continued movement of the slab or slabs.

Seismic Cracks can be caused by movement of the ground under or near a building. This can occur from natural seismic activity, or from man-made forces, such as nearby railroad tracks, etc. It is best to identify the cause of these and determine the best way to isolate the flooring from this movement if possible.

Prior to filling dynamic cracks, Sherwin-Williams High Performance Flooring recommends making a sawcut through the finished floor system to a depth of ¾" deep and a minimum width of ¼" with a diamond blade saw attached to a vacuum. Add a bond breaker such as a backer rod (closed cell) to the bottom. This will prevent three point adhesion.



STATIC CRACKS

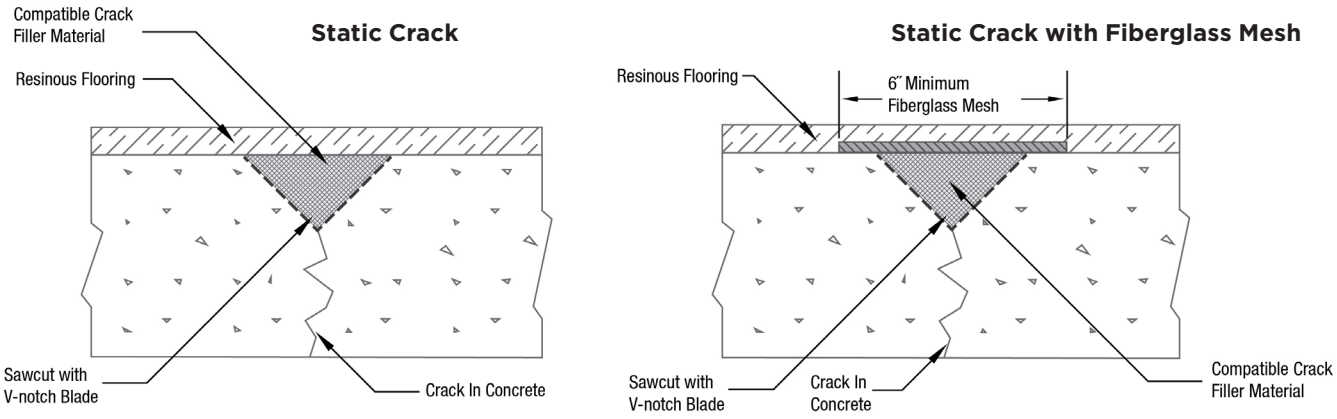
Static cracks, or dormant cracks, are any cracks that are not likely to become active in the future or whose movement is of such magnitude that a repair will not be affected.

Examples of static cracks are:

Craze Cracking refers to hairline cracks visible in the surface cream of the slab that typically do not extend very deep and are usually a result of rapid drying of the cream. Craze cracking usually does not require any special treatment and is usually mitigated in the prime coat.

Plastic Shrinkage Cracking is normal, non-structural cracking of the concrete that occurs as the slab cures. This can often be avoided by proper placement of control joints per ACI 302.1R-15.

- Plastic shrinkage cracks should be analyzed to ensure that they are static (not continuing to grow over time and do not show signs of heaving.)
- If plastic shrinkage cracks are observed prior to or during prep, they can be mitigated by patching the floor in the same method that would be used to treat a static joint.
- Plastic shrinkage cracks can also be treated using Resuflor 3555 or Resuflor EOC and fiberglass mesh to bridge the crack.



Prior to filling static cracks, be sure to prepare them by removing all laitance, debris and sealers. Make a sawcut with a V-notch blade attached to a vacuum.

Refer to the table below to determine which Crack Filler Material to use:

CRACKS	BOND BREAKER	REINFORCEMENT	CRACK FILLER MATERIAL (1/4 INCH WIDE)	CRACK FILLER MATERIAL (OVER 1/4 INCH WIDE)
Dynamic crack (moving)	Backer rod 1/8″ wider than joint	-	Flexible joint material (Resuflor 3580, Loxon [S1, SL2 & NS2] or equivalent)	Flexible joint material (Resuflor 3580, Loxon [S1, SL2 & NS2] or equivalent)
Static crack (non-moving)	-	Optional 6 inch minimum fiberglass mesh	• Epoxy flooring systems use Resuflor Glaze with Cab-O-Sil (No-Sag #2): Typical mix is 1 pint Resuflor Glaze hardener, 1 quart Resuflor Glaze resin, 3 quarts Cab-O-Sil (No-Sag #2) • Poly-Crete flooring systems use Poly-Crete SL or MD to fill joint • MMA flooring systems use MMA SL Filler Mix • Vent-E flooring systems use Resuflor 3580	• Epoxy flooring systems use Resuflor Glaze with Resuflor Screed III. • Poly-Crete flooring systems use Poly-Crete MD or WR • MMA flooring systems use MMA SL Filler Mix or Cryl-A-Tex • Vent-E flooring systems use Resuflor 3580

INSTALLATION TIMING

The American Concrete Institute (ACI) recommends that filling of industrial floor joints be deferred 60-90 days after floor slab pour or as long as possible. This is to allow control and construction joints time to open closer to their ultimate width through the concrete shrinkage process (In freezer/cooler areas, floor should be stabilized at ultimate operating temperature for 7 days prior to installation). We suggest the same for treating cracks.

Prior to treatment of crack, be sure to contact the facility's owner or manager to determine how long the concrete has cured as well as the location of moving and non-moving joints.

Note: Even with proper treatment, there is no guarantee against future cracking.

References:
International Concrete Repair Institute
ACI 224 "Joints in Concrete Construction"
ASTM Standards "C 1193 and C-920"
National Ready Mixed Concrete Association "Concrete in Practice"
AMPP

LIMITED PRODUCT WARRANTY

The Protective and Marine Division of The Sherwin-Williams Company (**"Sherwin-Williams"**) warrants the products in its Coating Systems to be manufactured free from defects in materials and workmanship for a period of one (1) year from the date of delivery (**the "Warranty Period"**).

Sherwin-Williams shall not be liable for any claims resulting from or related to (i) use of any Products in applications not recommended or approved in writing by Sherwin-Williams, (ii) improper application including improper surface preparation or failure to remove any bond breakers, curing compounds or laitance from the substrate, (iii) failure of or conditions related to the substrate, (iv) any damage or failure unrelated to the performance of the Products or (v) color.

EXCEPT FOR THE PRECEDING WARRANTIES, SHERWIN-WILLIAMS HEREBY DISCLAIMS ANY AND ALL OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, ORAL OR WRITTEN, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE. IN NO EVENT SHALL SHERWIN-WILLIAMS BE LIABLE TO APPLICATION CONTRACTOR OR ANY OTHER PARTY FOR ANY INDIRECT, SPECIAL, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR LOSS OF USE IN ANY WAY ARISING FROM THE MANUFACTURE, SALE, INSTALLATION OR PERFORMANCE OF THE PRODUCTS.

Sherwin-Williams agrees to provide replacement Product for any Product proven to be defective under this Limited Warranty. Sherwin-Williams' entire liability for any Product proven to be defective, and the sole and exclusive remedy in any way relating to the Product, shall be limited to the replacement Product to make the necessary repairs. This Limited Warranty shall be governed and construed in accordance with the laws of the state of Ohio. Any and all disputes, claims, actions or proceedings directly or indirectly arising out of or related to this Limited Warranty shall be decided solely and exclusively by a federal or state court located in Cuyahoga County, Ohio.

Any claim under this Limited Warranty must be made in writing to Sherwin-Williams within thirty (30) days of discovery and prior to the expiration of the Warranty Period. All claims shall be sent to: The Sherwin-Williams Company, 101 W. Prospect Avenue, Cleveland, OH 44115, Attention: Vice-President - Sales, Protective & Marine Division. Each claim under this Limited Warranty must contain a description of the alleged defect and Sherwin-Williams must have an opportunity to inspect the application and perform any required product testing to make a determination on the claim.