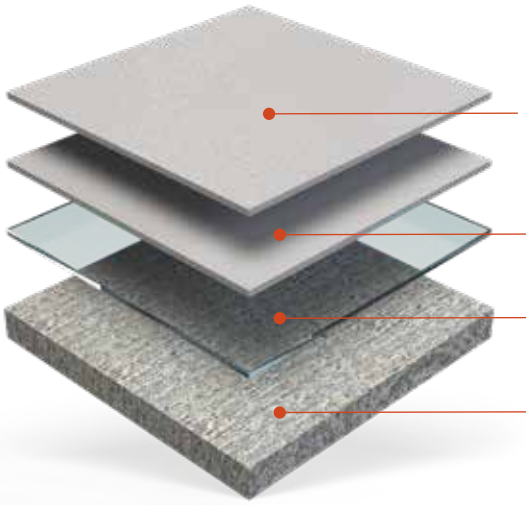
SIMFLOOR ESD SYSTEM GUIDE



TOPCOAT: SIMTHANE ESD, PIGMENTED

BASECOAT: 1100SL 100% SOLIDS EPOXY, PIGMENTED

PRIMER: SIMIRON EPOXY

PREPARED SUBSTRATE: CSP 3+

NOTE: PLEASE READ AND REVIEW THESE INSTRUCTIONS PRIOR TO INSTALLATION OF THE COATING SYSTEM. OTHER SIMIRON PRODUCTS MAY BE USED AS ALTERNATIVE PARTS OF THIS SYSTEM. CONTACT SIMIRON TECHNICAL SUPPORT AT CUSTOMERSERVICE@SIMIRON.COM OR 866-515-8775.

DESCRIPTION

SIMFLOOR ESD utilizes a unique high performance, three-component, high solids, low VOC urethane floor coating that provides static dissipative electrical properties. **Simthane ESD** urethane is translucent gray and must be mixed with **U-Tint** to yield a consistent, satin appearance with a light texture.

PRODUCT INFORMATION

PRODUCT NAME	SIZE	COLOR/FINISH	ITEM NUMBER
1000HS 100% Solids Epoxy Primer	1.5-Gallon Kit	Clear / Gloss	40008895
1100SL 100% Solids Self-Leveling Epoxy, Part A Base	2-Gallon	Clear	40004156
1100SL 100% Solids Self-Leveling Epoxy, Part B Activator	1-Gallon	Neutral	40004155
SIMTHANE ESD FILLER (used with resins from 1-Gallon Kit HWU)	ESD filler for 1-Gallon mix in a large, mixing pail	Gray / Satin	40009137

3-gallons 1100SL clear can be pigmented with 1-pint **Simiron U-Tint** in the following colors for use under ESD: Haze Gray, Light Gray, Deck Gray, Sandstone (2 pints Sandstone can be used to improve hide), Black, & Tile Red. White **U-Tint** is not used. **Simthane ESD** is available in the same colors using **U-Tint** to color the urethane. ESD urethane kits must be pigmented with 1 pint **U-Tint**. Since the functional filler in the product is gray, the resulting color will be slightly more gray than **U-Tints** in epoxy, which is most apparent with Sandstone.

COVERAGE RATES

PRODUCT NAME	WET FILM THICKNESS	DRY FILM THICKNESS	COVERAGE RATE
1000HS 100% Solids Epoxy Primer	3 – 8 mils	3 – 8 mils	200 – 533 sq. ft./gal.
1100SL 100% Solids Self-Leveling Epoxy	10 – 30 Mils	10 – 30 Mils	53 – 160 sq. ft./gal.
SIMTHANE ESD	2 – 3 Mils	2 – 3 Mils	600 sq. ft./gal.

PHYSICAL PROPERTIES

TEST NAME	TEST METHOD	RESULT
Adhesion to Concrete	ASTM D7234	> 400 PSI (100% Concrete Failure)
Coefficient of Friction (Wet DCOF)	ANSI A326.3	.60
Compressive Strength	ASTM D695	11,600 psi
Flammability		Self-Extinguishing on Concrete
Flexibility 1/8" Mandrel	ASTM D522	Passes / No Cracking
Flexural Strength	ASTM D790	12,800 psi
Gloss @ 60 Angle	ASTM D523	60 – 70
Hardness, (Pencil)	ASTM D3363	4H
Surface Resistance, Point to Point/Ground	ANSI/ESD STM 7.1	$1x10^5$ - $<1x10^9$ ohms
Taber Abrasion (CS-17 Wheel, 1000 mg Load, 1000 Cycles)	ASTM D4060	12 mg Loss
Tensile Strength	ASTM D638	9,600 psi
UV Resistance (gloss after 1000 hours in QUV)	ASTM G154	Excellent
VOC	EPA Method 24	95 g/L

CHEMICAL RESISTANCE

CHEMICAL	RESULTS
10% Acetic Acid	F
Vinegar	G
10% Citric Acid	G
10% Hydrochloric Acid	E
30% Hydrochloric Acid (muriatic)	E
10% Nitric Acid	G
50% Phosphoric Acid	G
10% Sulfuric Acid	F
37% Sulfuric Acid	F
70% Sulfuric Acid	F
20% Ammonium Nitrate	E
20% Sodium Chloride	E
50% Sodium Hydroxide	E

CHEMICAL	RESULTS
Methyl Ethyl Ketone	E
Xylene	E
Ethylene Glycol	E
Isopropyl Alcohol	E
Mineral Spirits	E
Brake Fluid	G
Transmission Fluid	E
Motor Oil	E
50:1 Gas/Oil Mixture	E
E85 Gasoline	E
E95 Gasoline	E
Unleaded Gasoline	E
Skydrol	E

CHEMICAL	RESULTS
Betadine	G*
Bleach	E
Urine	E
Coffee	E
Cola	E
Ketchup	F
Mustard	G
Red Wine	E

*Stain is only defect.

KEY	
E = Excellent	G = Good
F = Fair	NR = Not Recommend

SURFACE PREPARATION

Concrete and coated concrete surfaces must be sound, clean, dry, and free of contaminants such as loose coatings, dirt, dust, grease, oil, silicone, and other contaminants that may negatively affect adhesion.

MOISTURE VAPOR BARRIER: A suitable moisture barrier must be in place for concrete slabs on-grade. If a moisture barrier is not in place, seasonal variations in ground moisture can cause excessive moisture vapor transmission (MVT) regardless of results measured prior to coating application. MVT rate must not exceed three pounds per 1,000 square feet per 24 hours, as directed by ASTM F1869. The relative humidity (RH) of the slab must not exceed 75%, as directed by ASTM F2170. If there is a moisture situation in excess of the above rate, the use of Simiron MVB Moisture Vapor Barrier Primer may be required. Consult a Simiron Representative for details and application procedures.

NEW/BARE CONCRETE: Diamond grind or shotblast to a CSP-3 or greater surface profile. Refer to SSPC-SP13 / NACE 6 or ICRI Technical Guideline No. 310.2. New concrete must be cured a minimum of 28 days and should meet moisture vapor transmission (MVT) and relative humidity (RH) thresholds as described above.

SURFACE PREPARATION (CONT.)

PREVIOUSLY COATED SURFACES: Clean surface to prevent any contaminants from being spread/redistributed to a greater area being prepared. Thoroughly grind the surface with 30 grit metal diamonds to completely remove any grout or topcoats that are not epoxy based and provide proper surface profile required for adhesion of the system.

ELECTRICAL GROUNDING

Simthane ESD can be grounded to the building by installing copper tape underneath it on the epoxy insulator coat and connecting it to common ground. 2 inch wide, conductive, copper tape is commonly used to create a grounding point every 1000 sq. ft. in spots that do not receive traffic. A 2 foot long strip is all that is needed to connect the floor to a ground via an electrical outlet or steel column (paint needs to be removed where tape is adhered).

SAFETY & TECHNICAL

Refer to the SDS sheet before use. Safety precautions must be strictly followed during storage, handling, and use. Personal Protective Equipment (PPE) should be worn at all times. PPE will include (but is not limited to): Safety glasses with side shields, high-quality nitrile gloves, and properly fitted NIOSH approved respirators. To acquire additional information or technical and safety data, please visit: www.simiron.com.

TEMPERATURE

Air	60° – 85°F	16° – 29°C
Surface	60° – 85°F	16° – 29°C
Material	60° – 85°F	16° – 29°C

Higher temperatures and humidity will shorten pot-life and working time.

SET-UP & MIXING AREA

Place the mixing area as close to the project area as possible. Cover mix area with plastic, a tarp, or cardboard and securely tape to the floor. Assemble all necessary application tools, safety supplies & PPE, and clean-up supplies and place in the mixing area prior to starting the application process.

TAPE AND TERMINATION POINTS: Apply masking tape to all perimeter areas where the coating system will terminate. Sawcut and key-in all termination points around drains, dock plates, and high traffic impact points (see Simiron Drawings/Architectural Details).

PATCHING

Cracks, holes, eroded & spalled areas of the floor should be patched with **Simiron 800CF** Epoxy Crack Filler or a Simiron 100% Solids Epoxy thickened with fumed silica. For best results, scrape patch material flush with the surface. After priming, check to see if additional patching is required.

JOINTS

Honor all isolation, expansion, and movable joints with the appropriate joint material after the coating system is installed. Contraction (sawcut) joints may be filled and coated over; However, the coating system may crack over time if the slab experiences excessive shrinkage or movement (see Simiron Drawings/Architectural Details).

APPLICATION EQUIPMENT

Assemble all required application equipment. Equipment will include (but is not limited to):

- Drill and Jiffy® type mixing blade
- High quality non-shed 3/8" nap roller covers
- Edge rollers & chip brushes
- Painters' tape
- Duct tape
- High quality flat & notched EPDM squeegees
- Flat metal spring blade squeegee
- Spiked shoes
- Roller pans
- Measuring and mixing containers

APPLICATION PROCEDURE

1000HS PRIMER:

1000HS Primer mix ratio is 2 Parts Base to 1 Part Activator by volume.

1. Pre-mix Base at low speed for 1 minute. Add Activator and mix for three minutes until uniform. Do not mix more material than can be applied in 10 – 15 minutes (material will stiffen or tack-up).
2. Immediately pour mixed **1000HS Primer** on the floor in a long bead approximately 8 – 12 inches wide.
3. Wearing spiked shoes, spread evenly at 3 – 8 mils by pushing a flat squeegee or metal spring blade along the bead. Overlap previous passes in order to ensure concrete pinholes are filled. A tight, thin coat of primer with no back-roll is the best way to minimize outgassing bubbles.
4. If back-rolling, use a non-shed 3/8" roller and back-roll the primer evenly across the squeegee passes to minimize application lines and leave a consistent film thickness.
5. After the **1000HS Primer** has dried (see **1000HS** data sheet for drying schedule), apply the **1100SL** basecoat and vinyl chip broadcast.

1100SL 100% SOLIDS SELF LEVELING EPOXY:

1100SL 100% Solids Epoxy mix ratio is 2 Parts Base to 1 Part Activator by volume. 1100SL is packaged in a clear base that can be pigmented on-site with Simiron U-Tints

1. Pre-mix Base at low speed for 1 minute. Add Part B and mix for three minutes until uniform. Do not mix more material than can be applied in 10 – 15 minutes (material will stiffen or tack-up.)
2. Immediately pour mixed 1100SL on the floor in a long bead approximately 8 – 12 inches wide. Do not scrape sides or leave pail overturned to drain.
3. Wearing spiked shoes, spread evenly at 8 – 12 mils by pushing a 1/8" notched squeegee along the bead. Overlap previous passes in order to ensure consistent coverage.
4. Push the squeegee with a slight angle to plow extra material to the side, moving it down the floor.
5. Using a non-shed 3/8" roller, back-roll the **1100SL** evenly across the squeegee passes to minimize application lines and leave a consistent film thickness. Do not back-roll material after it begins to get sticky. The epoxy will not level and colored epoxy may turn a different shade.
6. After the epoxy has hardened, sand it with 80 grit screens to remove debris and smooth epoxy defects for best results. Vacuum and scrub or tack the area to remove all dust before topcoating.

SIMTHANE ESD URETHANE: TOPCOAT

1. Pre-mix Part B with a drill and Jiffy® type mixing blade @ low speed. Slowly add Part A to the part B can and mix well. Add the mixed resin to the Part C and mix very slowly to wet out the light filler and reduce dusting. Mix for 3 minutes until uniform. Add premixed **U-Tint** at 1 pint per 1 gal kit. Mix for 3 additional minutes or until mix is uniform and streak free. Do not mix more than 1 kit at a time.
2. Using a brush, cut in any edges and areas that will not allow coverage with a roller. Be careful to apply thin around all floor obstructions and at the base of a cove (floor and wall junction). Material applied to cove or vertical surface will run, leaving a pool at the base. These areas can be rolled out with a small roller designed for edging.
3. Pour mixed material into a roller pan and apply with a 3/8" nap roller cover at 600 sq. ft./gal. If you apply thicker than recommended, you are more likely to create: bubbles, soft film, texture and gloss variation.
4. Dip the roller in the material and lightly roll off excess coating in the roller pan. Roll across your area right to left or left to right, 2 parallel paths on the concrete that are approximately 8-10 feet in length. Repeat the dip and roll process , so there are 4 adjacent roller paths in front of the applicator. Agitate the mixed material in the roller pan frequently, as the Part C filler can settle to the bottom of the pan. Rolling out excess filler from the bottom of the roller pan can impact color and texture.
5. Back-roll the coating up and back across the previously applied paths (perpendicular) using a V-shape pattern to evenly spread the material and remove roller lines. There should be just enough material on the floor to cover the area. The final rolling passes should be straight up and back. Pulling material down toward the applicator and reaching to overlap at least 1 ft. into the previously applied area will allow better blending of application marks.
6. Move over or down the floor and repeat steps 4 and 5. To help prevent visual differences in application be sure to minimize the time between tie-ins. Use control joints or natural breaks as breaking points between mixes.
7. To better blend overlap and application marks, have a separate person finish roll no more than 20 minutes behind the other rollers on spiked shoes by pulling a wet roller across the entire area in the same direction as the original roller passes. The material will not flow out, so the coating will cure with any defects that are visible. Reroll areas that do not look satisfactory.
8. Do not back roll coating that has begun to tack up. This could result in an orange peel texture and/or a whiteish haze in the coating. Applying the coating thicker than recommended or rolling the material when sticky will cause bubbles, roller lines/inconsistent appearance.

CLEAN UP & DISPOSAL

Clean up mixing and application equipment immediately after use. Use acetone, or xylene; do not use alcohol. Follow solvent manufacturer's safety instructions. Be sure to follow all local, state, and federal regulations when disposing of materials.

MAINTENANCE

To maintain the appearance and extend the life of the newly sealed surface, it is imperative to have a routine maintenance program. Dirt and debris that is tracked over a finished floor will quickly scratch and dull the surface. Place walk-off mats at entrances. Sweep and mop/scrub floors regularly using soft bristles/pads and a mild cleaner. Some cleaning products and equipment or improper use of these can damage a surface. Remove spills quickly to minimize damage and/or stains. For systems that support parked vehicles or other heavy items on rubber wheels, place a small piece of nonporous material, such as sheet metal or plexiglass between the tires and floor to prevent tire marks. Reapplication may be necessary in heavy traffic areas.

LIMITATIONS

⚠ ESD flooring is only part of an electrostatic charge management solution. Do not apply at temperatures or thicknesses not recommended. Do not delay in pouring mixed epoxy primer and basecoat onto the floor. Do not make partial mixes. Do not invert epoxy pails to drain. Do not apply **Simthane ESD** without **U-Tint** pigment; **U-Tint** White is not an option. Do not apply over loose or unsound concrete, asphalt or bitumen substrates, glazed tile or nonporous brick and tile, magnesite, copper, metal, polyesters, or elastomeric membranes. Moving joints and shrinkage cracks may reflect through system. Joints that are designed to move may reflect through the finished flooring system if they are not honored. Tire marking may occur.

SHELF LIFE & STORAGE

12 months from date of manufacture when stored indoors in the original unopened container at 60°F – 85°F (16°C – 29°C) in a dry location with humidity below 65%.

⚠ Do not allow materials to freeze.

LIMITED WARRANTY

SIMIRON warrants this product to be free from defect in the material that affects its performance for a period of one year (from date of purchase). SIMIRON will replace at no charge the quantity of the coating that SIMIRON determines has failed to perform, as the sole and exclusive remedy for any breach of this warranty and/or any other defect or failure of the coating. Proof of purchase is required. Cost of labor for application of any product specifically is excluded. Warranty is void if Simiron products are mixed with or used in conjunction with materials that are substituted for Simiron products. Warranty is nontransferable.

TECHNICAL ASSISTANCE

Information is available by calling SIMIRON
Toll Free: **1.866.515.8775 / +1.248.686.3600**

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SYSTEM GUIDE: 12/18/2025

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