

PRODUCT DATA SHEET

Sikafloor®-340 ESD

Electrostatic Control Aliphatic UV, Chemical Resistant Urethane Coating

DESCRIPTION

Sikafloor®-340 ESD is a five component, aliphatic polyurethane ESD control system. The system is applied in two coats to provide a tough, durable ESD surface with matte finish.

USES

Sikafloor®-340 ESD may only be used by experienced professionals.

It is designed to impart electrostatic control properties to a variety of substrates, including existing nonconductive

coatings or resurfacers. Sikafloor®-340 ESD is chemical resistant and UV resistant. Sikafloor®-340 ESD can be used in almost any environment where the damaging effects of electrostatic discharge (ESD) cannot be tolerated. Industries currently using Sikafloor®-340 ESD:

- Electronics
- Data processing
- Military/Aerospace
- Photographic, graphic arts

CHARACTERISTICS / ADVANTAGES

- Consistent resistance measurements are obtained when testing in accordance with standard methods.
- Very low body voltage generation values possible when wearing heel straps C or SD footwear.
- Conforms to ANSI S20.20 when tested in accordance with ANSI STM 97.1 & ANSI S7.1
- Maintains ESD performance over the wear life of the coating.
- Maintains electrical conductivity throughout the entire thickness of the system.
- Does not depend on relative humidity for conductivity properties.
- Excellent hard wearing surface.
- Tough, non-porous surface is easy to clean and maintain.
- Good abrasion resistance.

PRODUCT INFORMATION

Chemical Base	Aliphatic Urtehane	
Packaging	Part A	1.4 US gal. (5.29 L) Resin packaged in 1- 2 US gal. pail
	Part B	1.00 US gal. (3.78 L) Hardener packaged in 1- 1 gallon pail
	Part C	0.25 US gal. (0.946 L) Color Additive, Two, one-pint cans (0.125 US gal. each)
	Part D	1.98 US gal. (7.49 L) ESD pack in one 5 US gal. pail
	Part E	E: 0.125 US gal. (0.473 L) Slip Resistant Additive, two, one-half pint cans
	Part A+B+C+D+E	Components for one [1] full mixed unit: 1-A+1-B+2-C+1-D+2-E: 4.75 US gal. (18.0 L)
	Resin - Part A	Clear, Liquid
	Hardener - Part B	Clear, Liquid
	Color Additive - Part C	Viscous liquid, Pigment as labeled
	ESD pack - Part D	Liquid with metallic oxide dispersion, Gun-metal gray in color
Slip Resistant Additive - Part E	White, Fine powder	
Mix all units of all components according to the instructions herein.		
Appearance / Colour	Sky Gray (approx. RAL 7035), Light Gray (No RAL), Medium Gray (approx. RAL 7001), Marshall Blue (No RAL), Brick Red (approx. RAL 3009). Other colors require lead time, or may not possible due to pigment limitations. Note: Sikafloor®-340 ESD must not be used with Dark Gray.	
Shelf Life	Part A - E:	3 months from the date of production. Protect from freezing.
Storage Conditions	Original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +40° and +90°F (+4° and +32°C). Always refer to packaging.	

TECHNICAL INFORMATION

Electrostatic Behaviour	1.0 x 10E6 to 1.1 x 10E9 ¹⁾	(ANSI STM S7.1)
	¹⁾ Readings may vary depending on ambient conditions (e.g. temperature, humidity) and measurement. Property tested at +73°F/+23°C and 50% r.h.	

APPLICATION INFORMATION

Mixing Ratio	
Consumption	Theoretical coverage for 4.75 gallon unit = 1,900 ft ² (~ 176.5 m ²) per coat at 4 wet mils (~ 100 µm wet film thickness). Sikafloor 340 ESD system requires two (2) coats. Do not apply in single coat.
Product Temperature	Precondition material for at least 24 hours between +65° to +75°F (+18° to +24°C).
Ambient Air Temperature	+50°F (+10°C) min. / +86°F (+30°C) max.
Relative Air Humidity	Minimum ambient humidity 30% Maximum ambient humidity 75% (during application and curing)

Dew Point

Beware of condensation. The substrate and uncured floor must be at least +5°F (+3°C) above the dew point to reduce the risk of condensation, which may lead to adhesion failure or “blushing” on the floor finish.

Substrate Temperature

+50°F (+10°C) min. / +85°F (+30°C) max.

Substrate Moisture Content

Moisture content of concrete substrate must be ≤ 4% by mass (pbw – part by weight) as measured with a Tramex® CME/CMExpert type concrete moisture meter on mechanically prepared surface according to this product data sheet (preparation to CSP-3 to CSP-4 as per ICRI guidelines). Do not apply to concrete substrate with moisture levels > 4% mass (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter. If moisture content of concrete substrate is > 4% by mass (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter, use Sikafloor®-1610 or Sikafloor®-22NA or -24NA PurCem.

When relative humidity tests for concrete substrate are conducted per ASTM F2170 for project specific requirements, values must be ≤ 85%. If values are > 85% according to ASTM F2170 use Sikafloor®-1610 or Sikafloor®-22NA PurCem.

ASTM F2170 testing is not a substitute for measuring substrate moisture content. Use a Tramex® CME/CMExpert type concrete moisture meter as described above.

Pot Life

Material Temperature	Time
+55°F (+10°C)	~ 40 minutes
+73°F (+20°C)	~ 30 minutes
+90°F (+30°C)	~ 20 minutes

Sikafloor®-340 ESD must be applied and distributed immediately after mixing. Do not apply if indicated pot life is exceeded. End of pot life is not visible.

Curing Time

Ambient & Substrate Temperature	Foot traffic	Light traffic	Full cure
+50°F (+10°C)	~ 24 hours	~ 6 days	~ 10 days
+68°F (+20°C)	~ 12 hours	~ 4 days	~ 7 days
+86°F (+30°C)	~ 10 hours	~ 2 days	~ 5 days

Waiting Time / Overcoating

Before applying second coat of Sikafloor®-340 ESD allow:

Ambient & Substrate Temperature	Minimum	Maximum
+50°F (+10°C)	14 - 16 hours	36 hours
+68°F (+20°C)	10 - 12 hours	24 hours
+86°F (+30°C)	8 - 10 hours	16 hours



BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

FURTHER DOCUMENTS

Electrical Grounding

The installation of an isolation layer/primer to seal the substrate is required. A high degree of ESD grounding control may be achieved with ESD top coats without direct connection to an earth grounding point. For applications that are more critical or per project specifications, it is recommended that the various coatings be applied in direct, uninterrupted contact with properly prepared grounding points. Metal floor joints, metal equipment bases and steel columns or posts may be used if they have been electrically tested to confirm permanent continuity with an earth ground. Generally, a minimum of one grounding point per every 1,000 square feet (approx. 100 m²) of flooring is sufficient for proper dissipation of static electricity. Adhesive backed copper grounding tape is used as a grounding point. Copper tape can also be used to bridge control joints around columns or different concrete slabs. Copper tape and the Sikafloor®-340 ESD cannot be expected to maintain integrity over expansion joints that experience wide movement. Embedded grounding points, such as copper tape, grounding snaps, etc, must be placed on top of a primer/isolation layer prior to installation of Sikafloor®-340 ESD. Methods of installation include, but are not limited to, the following techniques:

1. Use the copper tape to make an electrical connection with the green wire or grounding portion of an electrical outlet. A 4 in. (10.2 cm.) portion of the copper tape is adhered to the floor (cured primer or directly beneath the first coat of Sikafloor 340 ESD). If using a conductive primer, the copper tape must be installed under the conductive primer. Run the remaining tape up the wall and attach it to the electrical outlet. A variation of this technique involves dropping a No. 10 or 12 copper wire, inside the wall from any convenient ground bus so that the wire emerges at the floor/wall junction. At this point, a small hole cut into the drywall or chipped out of the concrete to allow the copper wire to emerge. The copper grounding strip is intertwined with, or soldered to, the stranded copper wire. If intertwined, use a conductive adhesive tape to secure the copper tape with the copper wire. Insert the connection of the copper tape and wire into the wall. The balance of the grounding strip, typically 4 in. (10.2 cm.) is then adhered to the floor.

2. The copper tape can be used to make ground connections with steel columns. The copper tape is adhered to the floor and run up onto the lightly sanded steel column or base. Drill and tap a hole into the steel column or base secure the copper tape using a machine screw and washer.

IMPORTANT CONSIDERATIONS

- This product may only be used by experienced pro-

fessionals.

- Prior to application, measure and confirm Substrate Moisture Content, Ambient Relative Humidity, Ambient and Surface Temperature and Dew Point. During installation, confirm and record above values at least once every 3 hours, or more frequently whenever conditions change (e.g. Ambient Temperature rise/fall, Relative Humidity increase/decrease, etc.). This is particularly important when applying in aircraft hangars.
- Mixing and Application attempted at Material, Ambient and/or Substrate Temperature conditions less than 65°F (18°C) will result in a decrease in product workability and slower cure rates.
- Dew Point: Beware of condensation!
- Mixing: Do not hand mix Sikafloor materials. Mechanically mix only.
- Do not thin this product. Addition of thinners (e.g. water, solvent, etc.) will slow cure and reduce ultimate properties of this product. Use of thinners will void any applicable Sika warranty.
- Do not apply while ambient and substrate temperatures are rising, as pinholes may occur.
- Ensure there is no vapor drive at the time of application. Refer to ASTM D4263, may be used for a visual indication of vapor drive.
- Freshly applied material should be protected from dampness, condensation and water for at least 72 hrs.
- Polymer and fiberglass concrete reinforcement fibers will interfere with conductive properties of Sikafloor ESD products. Consult Technical Service before applying to fiber reinforced substrates.
- Will discolor over time when exposed to sunlight (UV) and under certain artificial lighting conditions.
- Do not apply Sikafloor to concrete substrate containing aggregates susceptible to ASR (Alkali Silica Reaction) due to risk of natural alkali redistribution below the Sikafloor product after application. If concrete substrate has or is suspected to have ASR (Alkali Silica Reaction) present, do not proceed. Consult with design professional prior to use.
- Any aggregate used with Sikafloor systems must be non-reactive and oven-dried.
- This product is not designed for negative side waterproofing.
- Use of unvented heaters and certain heat sources may result in defects (e.g. blushing, whitening, debonding, etc.).
- Beware of air flow and changes in air flow. Introduction of dust, debris, and particles, etc. may result in surface imperfections and other defects.
- Use of unvented heaters and certain heat sources may result in defects (e.g. blushing, whitening, debonding, etc.).

ECOLOGY, HEALTH AND SAFETY

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

Cementitious substrates (concrete / screed) shall be sound and of sufficient compressive strength minimum 3,500 psi (25 MPa) with a minimum tensile strength of 215 psi (1.5 MPa). For other substrates, please contact Sikafloor Technical Services.

Substrates shall be clean, dry and free of all contaminants such as dirt, oil, grease, coatings and surface treatments, etc.

Cementitious substrates shall be prepared mechanically using suitable abrasive blast cleaning or planing / scarifying equipment to remove cement laitance and achieve an open textured surface profile suitable for the product thickness. (Reference: CSP 3-6 International Concrete Repair Institute or equivalent).

Weak cementitious substrates must be removed and surface defects such as blow holes and voids must be fully exposed.

Repairs to the substrate, filling of cracks, blowholes/voids and surface levelling must be carried out using appropriate products from the Sikafloor®, Sikadur® and Sikagard® range of materials. Products must be cured before applying Sikafloor®-340 ESD. All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by vacuum cleaning equipment. Whenever "shot-blasting" is utilized, be careful to leave concrete with a uniform texture. "Overblasting" will result in reduced coverage rates of the primer and/or subsequent topcoats. The "shotblast" pattern may show through the last coat, known as "tracking". Apply Sikafloor®-340 ESD only on primed, smooth concrete and screed surfaces. Priming coat must be thoroughly cleaned. In cases where the maximum permissible waiting time between priming and Sikafloor®-340 ESD has exceeded 48 hours / 68°F (20°C), the surface must be roughened mechanically, e.g. abrading to a dull finish, before applying the conductive coat. Do not broadcast quartz sand or other aggregate into primer coat with because this will interfere with the performance of subsequent conductive coat.

If in doubt, apply a test area first.

Use of primer on concrete substrate and/or isolation layer on existing ESD or epoxy coating is required. Prime with either Sikafloor®-160, Sikafloor®-161 or Sikafloor®-1610. Allow the primer to cure (varies with temperature and humidity) until tack free before applying subsequent coats. Ensure that the primer is pore-free, pinhole-free and provides uniform and complete coverage over the entire substrate. Sikafloor®-340 ESD requires a smooth, defect free, surface. Any pockets, dips, or other defect where the Sikafloor®-340 ESD may accumulate in excess of the recommended wet film thickness must be repaired prior to application. Please refer to the individual most current and respective product data sheet for specific and detailed information.

MIXING

Mix full units only

Sikafloor®-340 ESD must be applied with the full addition of the anti-slip additive.

Pre-mix Component D (5 gallon pail) with a low speed drill (200 - 400 rpm) for a minimum of 1 minute before proceeding. A jiffy-type mixing paddle with a variable speed mixing drill is then placed in the Component D (5 gallon) container and while running add the Part A Resin and ESD Additive (2 cans) to the vortex of the mix. Then add the Component B to the pigmented Components A+D and mix for 3 minutes at a moderate speed (300 rpm), scraping the container sides, bottom, and corners with the mixer. Add slip resistant additive Part E (required) (2 cans) and mix for one minute at a moderate speed, scraping the container sides, bottom, and corners with the mixer. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

APPLICATION

The floor must be divided into sections (at expansion joints or doorways when possible) that can be completed without stopping. When ending a section, tape it off to form a clean edge for an adjacent section. The Sikafloor®-340 ESD must be applied with a 3/8" nap roller and roller trays. 18 inch (46 cm) roller assemblies and trays are preferred. The roller should be wet in the tray and then the excess coating is removed by lightly rolling in the tray so as to avoid drips. Then apply 3 pairs of 6 - 8 foot (approx. 1.80 m - 2.40 m) long paths on to the floor. Then spread the material with roller passes perpendicular to the paths of coating. It is extremely important to apply the coating at a rate of 4 - 5 mils (approx. 100 µm - 130 µm) to achieve proper appearance, texture, and color development, and consistent ESD properties. If areas are too thick, the coating may be too soft, if too thin, the coating will appear very flat in sheen and may exhibit poor electrical properties. Work evenly to avoid late "tie-in" and re-rolling to adjacent previously applied material; Doing so may result in color variations. It is also very important to remix the material often with the roller in the tray to keep the Non-Slip Additive from settling.

CLEANING OF TOOLS

Sweep up spill and place in closed container. Dispose of in accordance with applicable local, state and federal environmental regulations. Uncured materials can be removed with approved solvents.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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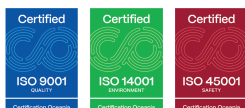
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Product Data Sheet

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