

Sikafloor® 100 ESD

Conductive, Carbon Black-Filled Epoxy Intermediate Coating for Use with Sikafloor® Electrostatic Discharge (ESD) Systems

Description Sikafloor® 100 ESD is a two-component, conductive intermediate coating based upon a carbon black-filled epoxy resin. It is always used in combination with Sikafloor® 200C ESD and Sikafloor® 700C ESD systems to provide resistance readings in the “conductive” range (2.5×10^4 to 1.0×10^6 ohms) as per EOS/ESD Standards.

- Where to Use**
- Semi-conductor and circuit board production rooms.
 - Electronic manufacturing, calibration and repair facilities.
 - Computer storage and data processing areas.
 - Military premises.
 - Aircraft hangers.
 - Aerospace industries.
 - Pharmaceutical plants.
 - Hospitals and testing laboratories.
 - Explosion hazard areas (gas, vapour, spray or fine dust).

- Advantages**
- Consistent resistance measurements are obtained when tested at 10 to 100 volts.
 - Meets EOS/ESD Standard 7.1 for conductive and static dissipative coatings.
 - Dissipates a 5000 volt charge to zero in less than 0.1 seconds (@ 22°C [72°F] & 12% R.H.).
 - Maintains performance over the wear life of the Sikafloor® ESD coating.
 - Maintains electrical conductivity throughout the entire thickness of the floor system.
 - Not dependant on relative humidity for conductivity properties.

Technical Data

Packaging	15.9 L (4.2 US gal.) kit - packaged as		
	Part R	1 x 13.06 L (3.45 US gal.) in part filled 18.9 L (5 US gal.) pail	
	Part H	1 x 2.84 L (0.75 US gal.) in part filled 3.78 L (1 US gal) can	
Colour	Black		
Yield	6.5 m ² /L (265 ft ² /US gal.) at 6 mils w.f.t.		
Shelf Life	1 year in original, unopened packaging. Store dry between 5 to 32°C (41 to 89°F). Condition product between 18 to 30°C (65 to 86°F) before using.		
Mix Ratio	R:H = 4.6:1 by weight		
Properties at 23°C (73°F) and 50% R.H.			
Density	1.4 kg/L (11.7 lb/US gal.)		
Viscosity	500 - 1500 cps mixed		
Pot Life	4 h		
Open Time on Substrate	30 min		
Waiting Time between Coats			
(h) (min./max.)	13°C (55°F)	23°C (73°F)	32°C (90°F)
Sikafloor® 156 ^{CA} /Sikafloor® 100 ESD	24/96	8/48	5/24
Sikafloor® 100 ESD/Sikafloor® 200 ESD	12/5 days	8/5 days	6/5 days
Sikafloor® 100 ESD/Sikafloor® 700C ESD	12/5 days	8/5 days	6/5 days
If the waiting time between the application of Sikafloor® 156 ^{CA} primer and Sikafloor® 100 ESD exceeds the maximum recoat period, abrade the surface of Sikafloor® 156 ^{CA} to remove gloss, vacuum and solvent wipe, with a damp cloth, to remove all traces of dust and dirt. Note: If the waiting time between Sikafloor® 100 ESD and Sikafloor® 200C ESD or Sikafloor® 700C ESD exceeds 5 days, do not abrade the Sikafloor® 100 ESD surface; contact Sika Canada Technical Services for advice.			
Curing Time	Tack-free	2 - 3 h	
	Dry hard	4 - 6 h	
	Full cure	5 - 7 days	

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.



How to Use

Surface Preparation

All concrete surfaces must be clean and sound. Remove any dust, laitance, grease, oil, dirt, curing agents, impregnations, wax, foreign matters, coatings and deleterious material, from the surface by any appropriate mechanical means, in order to achieve a profile equivalent to ICRI-CSP 3. The compressive strength of the concrete substrate should be at least 25 MPa (3625 psi) at 28 days and at least 1.5 MPa (218 psi) in tension at the time of application of Sikafloor® 156^{CA} primer.

Repair all surface defects, including rough concrete, blemishes, and cracks to create a uniform and level substrate prior to priming and the general application of the Sikafloor® 100 ESD. Use an epoxy mortar or epoxy gel made from Sikafloor® 156^{CA} and add an aggregate, as required, to level the surface. For additional information contact Sika Technical Sales for a specific recommendation.

Note: Failure to properly level and seal the substrate before application begins will result in uncontrolled thickness variations in Sikafloor® ESD system components that may affect resistance test results on the finished surface.

Priming

Apply Sikafloor® 156^{CA} primer onto all prepared concrete, using a brush, roller or squeegee at 4 m²/L (163 ft²/US gal.) (9 - 10 mils w.f.t.) per coat to achieve a uniform coverage without puddling, to seal the surface and create an insulation layer. Porous substrates may require additional prime coats to achieve a uniform film that seals the surface. Consult applicable Product Data Sheet for preparation, mixing and application details.

Electrical Grounding

It is important that Sikafloor® electrostatic discharge systems are applied in direct, uninterrupted contact with properly prepared grounding points. Typically, ground points can be established using the green ground wire in an electrical outlet, metal floor joints, metal equipment bases, steel columns or posts, provided they have been electrically tested to confirm permanent continuity with an earth ground, accordingly. A minimum of one grounding point per 93 m² (1000 ft²) of flooring should be established, with a minimum of two ground connections for any isolated area less than 93 m² (1000 ft²) in order to achieve proper dissipation of static electricity. Adhesive backed copper grounding tape or the proprietary "Sika Earthing Set" can be used to make an electrical connection. Contact Sika Canada Technical Sales for specific details.

Placing Connections

Begin placement of the electrode ground point connections once the Sikafloor® 156^{CA} primer coat is dry and resists damage from foot traffic. Install the earth ground connections using copper tape or Sika® Earthing Kit within the edge of the primed surface, as close as possible to walls or steel columns, to provide protection and prevent in-service traffic damage.

Mixing

Pre-stir the components of Sikafloor® 100 ESD separately to ensure product uniformity. The Part R (resin) container is partly filled and sized to allow use as the mixing vessel for a single unit. Start mixing the resin using a low speed drill (300 - 400 rpm) to minimize air entrapment and an Exomixer type mixing paddle (recommended model) suited to the volume of the mixing container. Add the Part H (hardener) to the Part R (resin) and mix for 3 minutes. Blend the components until a uniform colour and consistency is achieved. During the mixing operations, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure complete mixing. **Mix full units only; do not part mix.**

Application

Conductive Intermediate (Sikafloor® 200C ESD or Sikafloor® 700C ESD systems): Once the Sikafloor® 156^{CA} primer is dry and the earth ground electrodes are installed, apply the Sikafloor® 100 ESD conductive intermediate coating by brush, roller or squeegee at 6.5 m²/L (265 ft²/US gal.) (6 mils w.f.t.) to achieve a uniform coverage. Avoid puddling on the primed substrate and the bare copper electrodes.

Body Coats (Sikafloor® 200C or Sikafloor® 700C ESD coatings): Consult applicable Product Data Sheets for preparation, mixing and application details.

Clean Up

Clean all tools and equipment with Sika® Equipment Cleaner. Once hardened, product can only be removed mechanically. Wash soiled hands and skin thoroughly in hot soapy water or use Sika® Hand Cleaner towels.



Limitations

- Sikafloor® ESD systems are best installed by skilled and experienced applicators. Consult Sika Canada Technical Sales for advice and recommendations.
- Not suitable for use on exterior, slab on-grade substrates.
- Minimum/maximum substrate temperature: 13°C/30°C (55°F/86°F).
- Maximum relative humidity during application and cure: 85%.
- Substrate temperature must be 3°C (5°F) above measured dew point.
- Determine the surface moisture content by using an impedance moisture meter (Tramex) designed for use on concrete as detailed in ASTM E1907. Acceptable test results shall be 4% by mass or less. If above this value, use Sikafloor® 81/82 EpoCem^{CA} for moisture mitigation before proceeding.
- Conduct quantitative anhydrous calcium chloride testing in accordance with ASTM F1869. Maximum acceptable test result is 1.5 kg/100 m² (3 lb/1000 ft²) per 24 hours. If above this value, again use Sikafloor® 81/82 EpoCem^{CA} for moisture mitigation before proceeding .
- Do not hand mix Sikafloor® materials / mechanical mix only.
- Do not thin this product. Addition of thinners will slow the cure and reduce the ultimate properties of this product. Critical recoat times will also be affected.
- Sikafloor® 100 ESD should be protected from dampness, condensation and water for at least 24 hours immediately following application.

Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the **most recent Material Safety Data Sheet** containing physical, ecological, toxicological and other safety-related data.

KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY

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, within their shelf life. 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 recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under www.sika.ca.

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