Sikafloor®-510
CLEAR OR PIGMENTED, ABRASION AND UV RESISTANT POLYASPARTIC RESIN SYSTEM

Description
Sikafloor®-510 is a clear, two-component, solvent-free, high solids, low-viscosity, high strength, polyaspartic resin system designed to be installed as a clear topcoat over decorative multi-colored quartz or flake broadcast systems where a low VOC, fast cure, flexible, UV resistance finish coat is necessary. Sikafloor®-510 is available in clear or pigmented with Sikafloor® Urethane Color Additive or Sikafloor® Metallic FX powders to achieve a variety of colour.

Where to Use
Sikafloor®-510 can be used as a concrete primer, binder, and sealer especially when fast cure times and UV resistance are required. Typically used in decorative applications, chemical storage areas, warehouses, washrooms, laboratories, food preparation areas and chemical process plants.

Advantages
- Fast cure at low temperatures down to 4.5 °C (40 °F)
- Durable, impermeable and seamless
- Superior mechanical resistance
- Superior aesthetic glossy finish
- Excellent UV resistance
- Excellent chemical resistance to a wide range of organic and inorganic acids, alkalis, salts and solvents
- High density prevents dirt penetration, which provides easy cleaning
- VOC Compliant, < 30 g/L
- Meets the requirements of CFIA and USDA for use in food plants

Technical Data

| Packaging       | 10 L (2.64 US gal.) Unit
| Component A: 6 L (1.58 US gal.) Resin
| Component B: 4 L (1.06 US gal.) Hardener
| 30 L (7.92 US gal.) Unit
| Component A: 18 L (4.75 US gal.) Resin
| Component B: 12 L (3.17 US gal.) Hardener
| Colour          | Clear or pigmented using Sikafloor® Urethane Color Additive 0.95 L per 11.4 mixed liters (1 US quart per 3 mixed US gallons)
| Coverage        | Smooth Finish Coating:
| Prime coat: 4 - 6 m²/L (160 - 320 ft²/US gal) at 5 - 10 mils w.f.t.
| Wear coat: 2.6 - 4 m²/L (107 - 160 ft²/US gal) at 10 - 15 mils w.f.t.
| (These figures do not allow for surface porosity, profile or wastage)
| Mixing Ratio (by volume) | A:B = 3:2
| Application Temperature | 4 °C min., 30 °C max. (40 °F min., 85 °F max.)
| Cure Time at 23 °C (73 °F) & 60 % R.H. | ~ 4 hours
| Foot traffic | ~ 8 hours
| Light traffic | ~ 5 days
| Full cure | ~ 90 minutes min., ~ 24 hours max.
| Recoat Time | ~ 15 - 20 minutes at 23 °C (73 °F) and 60 % R.H.
| Pot Life | High temperature and high humidity will accelerate curing and reduce pot life.

Properties at 23 °C (73 °F) and 50 % R.H.
- Viscosity (mixed) ~ 850 cps
- Density ASTM C905 ~ 1.08 kg/L
- Tensile Strength ASTM C307 ~ 44.8 MPa (6500 psi)
- Elongation ASTM D638 ~ 10 %
- Pull-off Strength ASTM D7234 ~ 3.5 MPa (500 psi) (substrate failure)
- Hardness, Shore D ASTM D2240 ~ 75
- Dynamic Coefficient of Friction (DCOF) BOT ~ 0.33 Wet (smooth, high gloss)
- 30000e - ANSI A137.1 ~ 0.99 Dry (smooth, high gloss)
- VOC Content < 30 g/L

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

Surface must be clean, sound and dry. Remove dust, laitance, grease, curing compounds, bond inhibiting impregnations, waxes and any other contaminants. All projections, rough spots, etc., should be ground off or removed to achieve a level surface prior to the application.

Concrete - Should be cleaned and prepared to achieve a laitance and contaminant-free, open textured surface (ICRI / CSP 3 - 4) by shot-blasting or equivalent mechanical means. Sweep and vacuum any remaining dirt and dust with a wet/dry vacuum. Removing residual dust will help ensure a tenacious bond between the primer and substrate. Whenever shot-blasting is utilized, be careful to leave concrete with a uniform texture. Over-blasting will result in reduced coverage rates of the primer and/or subsequent top coats. It is also possible that the texture of the shot-blast pattern may show through the last coat. This is known as “tracking”. The compressive strength of the concrete substrate should be at least 24 MPa (3500 psi) at 28 days and at least 1.5 MPa (215 psi) in tension at the time of application of Sikafloor®-510.

Priming

Priming for concrete substrate is required. Prime with either Sikafloor®-156, Sikafloor®-1610 or Sikafloor®-Squeegee and roll apply Sikafloor®-510 to provide a uniform coverage without ponding, 2.6 - 4 m²/L (107 - 160 ft²/US gal) [10 - 15 mils]. If required, repeat this procedure for a second coat.

Mixing

Mixing Ratio - A : B = 3 : 2 by volume.

For bulk packaging, when not mixing full units, each component must be pre-mixed separately to ensure product uniformity.

Clear Resin:

Premix each Component separately. Empty Component B (Hardener) in the correct mix ratio into Component A (Resin). Mix the combined components at low speed (300 - 450 rpm) for at least three (3) minutes using a drill fitted with an Exomixer® or Jiffy type paddle suited to the volume of the mixing container to minimize entrapped air. Be careful not to introduce any air bubbles while mixing. Make sure the contents are completely mixed to avoid any weak or partially cured spots in the coating. During the mixing operation, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure complete mixing.

Field Pigmented:

If colour is desired, the appropriate Sikafloor® Urethane Color Additive is added to Component A at a rate of 0.95 L per 11.4 mixed liters (1 quart per 3 mixed gallons) (i.e. Components A+B) for all colours. Mix Component A and Sikafloor® Urethane Color Additive at low speed (300 - 450 rpm) for two (2) minutes or until a uniform colour is achieved using a drill fitted with an Exomixer® or Jiffy type paddle suited to the volume. Empty Component B (Hardener) in the correct mix ratio to Component A (Resin) and mix for two (2) additional minutes. Be careful not to introduce any air bubbles while mixing. Make sure the contents are completely mixed to avoid any weak or partially cured spots in the coating. During the mixing operation, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure complete mixing.

NOTE: Sikafloor® Urethane Color Additive can shorten the working time (Pot Life) of Sikafloor®-510. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

Application

As a Pigmented Topcoat/Sealer Coat for Smooth or Broadcast Finish:

Squeegee and backroll Sikafloor®-510 to provide a uniform coverage without ponding, 2.6 - 4 m²/L (107 - 160 ft²/US gal) [10 - 15 mils]. If required, repeat this procedure for a second coat.

As a Clear Topcoat for a Broadcast Quartz or Flake System:

Squeegee and back roll Sikafloor®-510 to provide a uniform coverage without ponding, 2.6 - 4 m²/L (107 - 160 ft²/US gal) [10 - 15 mils]. If required, repeat this procedure for a second coat.

As a Stand Alone Double Broadcast Quick-cure Decorative Quartz and Flake System:

Step 1: Primer - Apply neat Sikafloor®-510 on prepared substrate as a primer using a squeegee and roller without ponding, 4 - 8 m²/L (160 - 320 ft²/US gal) [5 - 10 mils]. Note: When using Sikafloor®-S510 as primer, extra precaution has to be taken on the substrate preparation and moisture content.

Step 2: First Broadcast Application - Squeegee and roll apply Sikafloor®-510 to provide a uniform coverage without ponding, 2.6 - 4 m²/L (107 - 160 ft²/US gal) [10 - 15 mils]. Broadcast preblended decorative flakes or coloured quartz aggregates into the binder to saturation. Broadcast in a manner so that aggregates fall vertically into the binder. Broadcast to rejection. Ensure that broadcast flakes/aggregates cover entire surface. Allow broadcast system to cure sufficiently to be able to resist foot traffic without damaging the surface. Remove excess flakes/aggregates from the surface by sweeping, followed by vacuuming, until surface is free of all loose particles and dust.
Step 3: Second Broadcast Application - Squeegee and backroll Sikafloor®-510 to provide a uniform coverage without ponding, 2.6 - 4 m²/L (107 - 160 ft²/US gal) [10 - 15 mils]. Broadcast preblended decorative flakes or coloured quartz aggregates into the binder to saturation. Broadcast in a manner so that aggregates fall vertically into the binder. Broadcast to rejection. Ensure that broadcast flakes/aggregates cover entire surface. Allow broadcast system to cure sufficiently to be able to resist foot traffic without damaging the surface. Remove excess flakes / aggregates from the surface by sweeping, followed by vacuuming, until surface is free of all loose particles and dust.

Step 4: Finish Coat - Squeegee and backroll Sikafloor®-510 to provide a uniform coverage without ponding, 2.6 - 4 m²/L (107 - 160 ft²/US gal) [10 - 15 mils]. When required, repeat this procedure for a second coat.

Critical Recoat/Overcoat Time

It is important to apply subsequent coats of this and other products within 6 to 24 hours (under normal curing conditions). If this coating is allowed to cure longer than the 24 hours before subsequent recoats, light sanding, vacuum cleaning and solvent wiping will be necessary. The floor surface should be sanded/abraded to the effect that a uniform dullness is achieved. There should be no gloss present on the floor after vacuuming and before applying the next coat.

Clean Up

Wash soiled hands and skin thoroughly in hot, soapy water or use Sika Hand Cleaner. Uncured material can be removed with Sika® Urethane Thinner and Cleaner. Cured material (Component A combined with Component B) can only be removed mechanically. In case of spill, ventilate area and contain spill. Collect with absorbent material and place in properly sealed container. Dispose of in accordance with current applicable local, provincial and federal regulations.

Limitations

- Sikafloor®-510 is best installed by skilled and experienced applicators. Consult Sika Canada for advice and recommendations.
- Prior to application, measure and confirm the following: Substrate moisture content, ambient relative humidity, ambient and surface temperature and dew point. During installation, confirm and record above values at least once every three (3) hours, or more frequently whenever conditions change (e.g. ambient temperature rise/fall, relative humidity increase/decrease, etc.).
- Moisture content of concrete substrate must be ≤ 4 % (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 ICRI / CSP 3 - 4). Do not apply to concrete substrate with moisture levels exceeding 4 % (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter. If moisture content of concrete substrate exceeds 4 % by mass (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter, use Sikafloor®-1610 or Sikafloor®-81 EpoCem®CA.
- When relative humidity tests for concrete substrate are conducted per ASTM F2170 for project specific requirements, values must be ≤ 85 %. If values exceed 85 % according to ASTM F2170, use Sikafloor®-1610 or Sikafloor®-81 EpoCem®CA. ASTM F2170 testing is not a substitute for measuring substrate moisture content with a Tramex® CME/CMExpert type concrete moisture meter as described above.
- **Product Temperature:** Precondition product for at least 24 hours at temperatures between 18 and 24 °C (65 and 75 °F)
- **Ambient and substrate temperature:** Min. 4 °C / Max. 30 °C (40 / 86 °F)
- **Mixing and application attempted at material, ambient and/or substrate temperature conditions below 18 °C (65 °F) will result in a decrease in product workability and slower cure rates.
- **Ambient humidity during application and curing:** Min. 30 % / Max. 75 %. Note: Low Relative Ambient Humidity may result in slower cure.
- **Beware of condensation!** The substrate must be at least 3 °C (5 °F) above the dew point to reduce the risk of condensation, which may lead to adhesion failure or “blushing” on the floor finish. Be aware that the substrate temperature may be lower than the ambient temperature.
- Do not hand mix Sikafloor® materials. Mechanically mix only.
- If Sikafloor®-510 is used as a primer, apply the coating to the prepared substrate using a squeegee and back roll to provide uniform coverage. Ensure that the coating is pore free and pinhole-free and provides uniform and complete coverage over the entire substrate. If necessary, apply an additional coat to ensure the coating is pore-free and pinhole-free and provides uniform and complete coverage over the entire substrate.
- Do not apply while ambient and substrate temperatures are rising, as pinholes may occur. Ensure there is no vapour drive at the time of application. Refer to ASTM D4263, may be used for a visual indication of vapour drive.
- Freshly applied material should be protected from dampness, condensation and water for at least 72 hours.
- Use of clear UV resistant top coat may not prevent discoloration of underlying coatings.
- 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.
- Typically not recommended for exterior slabs on grade where freeze/thaw conditions may exist.
- 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 introduction. Introduction of dust, debris, and particles, etc. may result in surface imperfections and other defects.
Published Dynamic Coefficient of Friction (DCOF) wet and dry test results are approximate values based on laboratory test samples produced in a controlled environment following the application instructions published on the product data sheet. Resin flooring products are hand applied finishes subject to minor variations in surface texture due to influences partly beyond Sika Canada’s control. Substrate profile, environmental conditions, variable regional aggregate size, shape and gradation, aggregate distribution, uniformity of applied resin mil thickness, and application technique can all affect the final DCOF test results achieved. Adequate provision should be made by the client throughout the selection and installation process to ensure the finished surface texture meets the end user’s traction requirements.

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 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 shelflife. 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 information contained herein does not relieve the user of the products from testing them for the intended application and purpose. 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 or may be downloaded from our website at: www.sika.ca