BUILDING TRUST
CONSTRUIRE LA CONFIANCE

PRODUCT DATA SHEET

# Sikafloor®-510 N LPL

Abrasion and UV Resistant Polyaspartic Resin System

## PRODUCT DESCRIPTION

Sikafloor®-510 N LPL is a two-component, solvent-free, high solids, low VOC, low-viscosity, high strength, UV resistant, polyaspartic coating system. Sikafloor®-510 N LPL is formulated to have an extended pot life and working time in elevated temperatures and humid conditions.

Sikafloor®-510 N LPL is typically installed as a water-clear, glossy topcoat over decorative multicoloured quartz or flake broadcast systems where a fast cure, flexible, UV resistance finish coat is desired.

## WHERE TO USE

Sikafloor®-510 N LPL should only be used by qualified and experienced installers.

- Sikafloor®-510 N LPL can be used as a concrete primer, a binder or a sealer especially when fast cure times and UV resistance are required.

## CHARACTERISTICS / ADVANTAGES

- Fast cure, allowing a rapid return to service
- Excellent chemical resistance to a wide range of organic and inorganic acids, alkalis, amines, salts and solvents
- Superior aesthetic glossy finish
- Durable, impermeable and seamless
- High density prevents dirt penetration, which provides easy cleaning
- Extended working time and reduced odour
- Excellent UV resistance
- Superior mechanical resistance
- VOC Compliant

## ENVIRONMENTAL INFORMATION

- Potential contribution for LEED® projects.

## APPROVALS / CERTIFICATES

- Meets the requirements of CFIA for use in food plants.

## PRODUCT INFORMATION

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|---|---|
| **Packaging** | **Components A+B:** 12.6 L (3.33 US gal)<br><br>Component A: 7.57 L (2 US gal)<br>Component B: 5.03 L (1.33 US gal) |
| **Appearance / Colour** | Water-clear |
| **Shelf Life** | 1 year in original, unopened packaging. |

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| **Storage Conditions** | Store in a dry place, protected from freezing at a temperature between 5 °C and 32 °C (41 °F and 90 °F). Protect from freezing. If Sikafloor®-510 N LPL has frozen, contact Sika Canada. |
| **Volatile organic compound (VOC) content** | < 50 g/L |
| **Viscosity** | A+B: ~500 cPs |
| **CSC MasterFormat®** | **09 67 00 \| FLUID-APPLIED FLOORING** |

## TECHNICAL INFORMATION

| | | |
|---|---|---|
| **Shore D Hardness** | ~ 80 | (ASTM D2240) |
| **Abrasion Resistance** | ~0.037 g loss: CS17 wheel /1000 g /1000 cycles | (ASTM D4060) |
| **Elongation at Break** | ~8.3 % | (ASTM D638) |
| **Pull-Off Strength** | > 2.7 MPa (400 psi) (concrete failure) | (ASTM D7234) |
| **Chemical Resistance** | Consult Sika Canada | |
| **Coefficient of Friction** | ~ 0.38 Wet (smooth high gloss)<br>~ 0.99 Dry (smooth high gloss) | (ANSI A137.1 / ANSI A326.3)<br>(DCOF - BOT 3000e) |

## APPLICATION INFORMATION

| | |
|---|---|
| **Mixing Ratio** | A:B = 3:2 (by volume) |
| **Consumption** | **Smooth Finish Coating:**<br>As a primer: 3.9-4.9 $m^2$/L (160-200 $ft^2$/US gal) at 0.20-0.25 mm (8-10 mil) wet film thickness (w.f.t.)<br>Wear coat: 2.6-3.3 $m^2$/L (105-135 $ft^2$/US gal) at 0.30-0.38 mm (12-15 mil) wet film thickness (w.f.t.) |
| **Product Temperature** | Condition product at temperatures between 18 °C and 30 °C (65 °F and 86 °F) before using and during the application. |
| **Ambient Air Temperature** | Minimum: 10 °C (50 °F) / Maximum: 30 °C (86 °F)<br><br>**Note:** Mixing carried out under conditions where the Sikafloor®-510 N LPL temperature and ambient temperature are below 18 °C (65 °F) will result in reduced product workability and slower curing rates. |
| **Relative Air Humidity** | Minimum: 30 % / Maximum: 75 % (during application and curing)<br><br>**Note:** Low Relative Ambient Air Humidity may result in slower cure. |
| **Dew Point** | 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. |
| **Substrate Temperature** | Minimum: 10 °C (50 °F) / Maximum: 30 °C (86 °F)<br><br>Note: Any attempt to apply Sikafloor®-510 N LPL at substrate temperature conditions less than 18 °C (65 °F) will result in an increase in viscosity and slower cure rates. |
| **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. |

**Pot Life**

| Material Temperature | Time |
|---|---|
| 10 °C (50 °F) | ~40 minutes |
| 20 °C (68 °F) | ~30 minutes |
| 30 °C (86 °F) | ~20 minutes |

**Curing Time**

| Ambient & Substrate Temperature | Foot traffic | Light traffic | Full cure |
|---|---|---|---|
| 20 °C (68 °F) and 50 % R.H. | ~ 4 hours | ~ 8 hours | ~ 5 days |

**Waiting Time / Overcoating**

Before applying second coat of Sikafloor®-510 N LPL allow:

| Ambient & Substrate Temperature | Minimum | Maximum |
|---|---|---|
| 20 °C (68 °F) & 50 % R.H. | ~90 minutes | 24 hours |

**IMPORTANT:** If the maximum waiting time has been exceeded. The previous coat must be lightly sanded, to remove all gloss; vacuum cleaning using a brush attachment followed promptly with a solvent wipe off the surface as per the following generally accepted practices:

- **Avoid using solvent that can leave a oily residue:** (such as, but not limited to most mineral spirit).
- **Avoid Paper Towels:** Pre-treated shop towels or standard paper towels may contain silicone or manufacturing additives that will ruin your paint job. Stick to lint-free cotton cloths or dedicated microfiber towels.
- **Change Rags Frequently:** As soon as a rag becomes visibly dirty, discard it or fold it to a clean side. Continuing to wipe with a saturated, dirty rag just re-deposits contaminants onto the surface.
- **Wet Wipe:** Pour a solvent (onto the first rag. Do not dip the rag into the solvent container; pour it directly to keep your supply clean).
- **Lift:** Wipe down a small, manageable section (e.g., ~0.5 $m^2$ [~ 4-6 $ft^2$]) of the surface. Use enough pressure to break up and lift the oils or sanding dust. Rotate the cloth frequently so you are always using a clean spot.
- **Dry Wipe:** Before the solvent can flash off (evaporate) and dry on the surface, wipe the same section with a second, clean, lint-free rag. When used correctly, this second cloth absorbs residual solvent and removes materials that could reduce or prevent adhesion or the proper performance of the next coat.

## BASIS OF PRODUCT DATA

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.
Properties tested at 23 °C (73 °F) and 50 % R.H. unless stated otherwise.

## LIMITATIONS

**NOTE:** The user is solely responsible for the proper use of the product. Any site visit carried out by Sika® personnel, upon the user's request, is intended solely to provide written technical recommendations based on

Sika® documentation. They are in no way intended to supervise, approve or control the quality of the work performed on site. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose.

- 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.
- Do not apply to cracked or unsound substrates.D
- Do not apply on porous surfaces where outgassing conditions are present during the application of Sikafloor®-510 N LPL.
- Do not apply on porous surfaces where a transfer of moisture vapour may occur during application.
- Do not apply while ambient and substrate temperatures are rising, as pinholes may occur.
- Do not use on exterior, Sikafloor®-510 N LPL is for interior use only.
- Do not apply to surfaces where water vapour could condense and freeze.
- Do not apply to substrates exposed to extreme thermal shock.
- This product is not designed for negative side waterproofing.
- Do not dilute Sikafloor®-510 N LPL. Adding diluents (water, solvent, etc.) will slow curing and reduce the final properties of this product. Diluents must never be added to the mixture. Adding diluent will void any applicable Sika® warranty.
- May be incompatible with certain existing coatings. Consult with Sika Canada for guidance before specifying or application and carry out trial sections.
- Not recommended for use on surfaces which are exposed to highly corrosive chemicals or heavy wear.

**As well, Sika recommends:**

- That 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.).
- To verify and ensure that 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 to 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 % (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter, use Sikafloor®-1620 or Sikafloor®-81 EpoCem®CA on horizontal surfaces.
- That for specific project requirements, when relative humidity measurements of the concrete substrate taken according to ASTM F2170, the values should be below 85%. However, if these values are found to be above 85% (according to ASTM F2170), Sikafloor®-1620 or Sikafloor®-81 EpoCem®CA must be used.
- To keep in mind that ASTM F2170 testing is not a substitute for measuring substrate moisture content with a Tramex® CME/CMExpert type concrete moisture meter as described above.
- To beware of Dew Point condensation (the substrate temperature may be lower than the ambient temperature).
- To maintain and extend existing expansion joints through the Sikafloor® flooring system.
- That applied material will follow undulations, depressions, lines, etc. of the underlying substrate. Visual appearance of the finished surface may vary, including, but not limited to, reflection of “waviness”, wall transitions, etc.
- That any aggregate used with Sikafloor®-510 N LPL must be non-reactive and oven-dried.
- To take into account that the mechanical and physical properties are achieved when full curing is complete.
- That freshly applied material should be protected from dampness, condensation and water for at least 24 hours. Protect substrate during application from condensation from pipes or any overhead leaks.
- To take in account that colour uniformity cannot be completely guaranteed from batch to batch (numbered). Take care when using Sikafloor®-510 N LPL products to draw from inventory in batch number sequence, do not mix batch numbers in a single floor area.
- To take in account that Sikafloor®-510 N LPL may not prevent discolouration of underlying coatings.
- To take into account that direct-fired gas or kerosene heaters produce byproducts that can have adverse effects on the curing resin. To avoid this occurrence, heaters must be exhausted to exterior of the building to avoid defects such as surface blush, whitening, loss of adhesion or other surface deficiencies.
- To beware of airflow and changes in airflow. 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.

## ENVIRONMENT, HEALTH & SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY

Concrete surfaces must be clean and sound. The compressive strength of the concrete substrate should be at least 25 MPa (3625 psi) at 28 days and a minimum of 1.5 MPa (217 psi) in tensile strength, at the time of the application.

Substrates must be free of contaminants such as dust, dirt, existing paint films, efflorescence, exudates, laitance, form, hydraulic or fuel oils, brake fluid, grease, fungi, mildew, biological residues or any other contaminants which may prohibit good bond or conditions of the substrate that may reduce the overall performances of Sikafloor®-510 N LPL.

### SURFACE PREPARATION

Before work commences, examine the areas to be covered and report any improper condition(s) in writing to the general contractor, architect or engineer (or otherwise, the owner). User shall not proceed with the work until surfaces and conditions comply with the requirements indicated in this document; applicable industry standards; federal, provincial and local regulations, as well as good trade practices. By starting work, the Applicator/User acknowledges that the conditions are acceptable.

Prepare the surface by any appropriate mechanical means, in order to achieve a profile equivalent to a minimum of ICRI CSP 3 (note: ICRI CSP 4 will provide better overall performances where high shear stress from dynamic loads may be present or that can reasonably be expected). 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 topcoats. The "shot blast" pattern may show through the last coat, known as "tracking".

Repairs to cementitious substrates, filling of blowholes, levelling of irregularities, etc. should be carried out using an appropriate Sika profiling mortar. Contact Sika Technical Service for recommendations in writing.

**Note:** Contact Sika's Technical Service for installation recommendations in writing concerning substrates or conditions not listed.

#### Priming

Priming for concrete substrate is required. Prime with either Sikafloor®-156 CA or Sikafloor®-1620 or Sikafloor® -165 FS. Allow the primer to cure (varies with temperature and humidity) until tack-free before applying subsequent coats. Ensure that the primer is pore- and pinhole-free and provides uniform and complete coverage over the entire substrate. When using Sikafloor®-510 N LPL as primer extra precaution has to be taken on the substrate preparation and on the moisture content, see product limitations for further details.

#### Expansion Joints

Expansion joints should be provided in the substrate at the intersection of dissimilar materials. Isolate areas subject to thermal stresses, vibration movements or around load-bearing columns and at vessel sealing rings. Communicate with Sika®'s technical services.

The owner (and architect) should discuss joint details with the flooring contractor before the job starts.

### MIXING

**Mixing ratio A:B = 3:2** (by volume)

**IMPORTANT:**
- Do not hand mix Sikafloor®-510 N LPL; mechanically mix only.
- Sikafloor®-510 N LPL must be applied as supplied.

Pre-stir Components A and B separately, making sure all solids, are evenly distributed. Empty Component B (Hardener) in the correct mix ratio into Component A (Resin) or empty Component A into a suitably sized and clean pail and add Component B in the correct ratio. Blend the combined components thoroughly 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 dimensions of the mixing container and keep the mixing paddle in the mix to avoid entrapping air. Take care 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. Do not attempt to attend to unmixed material that may gather on the sides of the mixing container while mechanical or electrical parts are in motion. When completely mixed,

Sikafloor®-510 N LPL should be uniform in appearance and consistency.

**Note:** 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 "water-clear" topcoat for a broadcast quartz or flake system:** Apply using a squeegee and back roll Sikafloor®-510 N LPL to provide a uniform coverage without ponding at a thickness of 0.25 - 0.38 mm (10 - 15 mil), at a rate of 2.6 - 3.9 m²/L (107 - 160 ft²/US gal). Repeat this procedure if a second coat is required.

**As a stand-alone double broadcast quick cure decorative quartz and flake system:**

**Step 1: Primer** - Apply neat coat of Sikafloor®-510 N LPL on the prepared substrate as a primer using a squeegee and roller without ponding at 0.12 - 0.25 mm (5 - 10 mil), at a rate of 3.9 - 7.8 m²/L (160 - 320 ft²/US gal).

**Notes:**

- When using Sikafloor®-510 N LPL as a primer, extra precaution has to be taken with regard to substrate preparation and moisture content, see product **LIMITATIONS** in this document for further details.
- Apply the coating to the prepared substrate using a squeegee and backroll to provide uniform coverage. Ensure that the substrate is pore- and pinhole-free and provides uniform and complete coverage over the entire substrate. If necessary, apply an additional coat to ensure the substrate is pore- and pinhole-free and provides uniform and complete coverage over the entire substrate.

**Step 2: First Broadcast Application -** Apply using a squeegee and back roll Sikafloor®-510 N LPL to provide a uniform coverage without ponding at a thickness of 0.25 - 0.38 mm (10 - 15 mil), at a rate of 2.6 - 3.9 m²/L (107 - 160 ft²/US gal). Broadcast pre-blended decorative flakes or coloured quartz aggregates into the binder to saturation. Broadcast in a manner so that the flakes or coloured quartz aggregates fall vertically into the Sikafloor®-510 N LPL. 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 up and vacuuming, until surface is free of all loose particles and dust.

**Step 3: Second Broadcast Application -** Apply using a squeegee and back roll Sikafloor®-510 N LPL to provide a uniform coverage without ponding at a thickness of 0.25 - 0.38 mm (10 - 15 mil), at a rate of 2.6 - 3.9 m²/L (107 - 160 ft²/US gal). Broadcast pre-blended 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 up and vacuuming, until surface is free of all loose particles and dust.

**Step 4: Finish Coat -** Apply using a squeegee and back roll Sikafloor®-510 N LPL to provide a uniform coverage without ponding at a thickness 0.25 - 0.38 mm (10 - 15 mil), at a rate of 2.6 - 3.9 m²/L (107 - 160 ft²/US gal). When required, repeat this procedure for a second coat.

### Waiting Time / Overcoating

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. Refer to the **Waiting Time / Overcoating** on page 3 of this document for preparing the surface.

### CLEAN UP

Clean all tools and equipment with a non-flammable solvent. Once hardened, product can only be removed mechanically.

## MAINTENANCE

Sika® recommends that you consult the document: **Sikafloor® Systems_Protection, Cleaning and Maintenance Guidelines**.

## LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

## 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 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

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