

Product Data Sheet
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Sikafloor 510

Sikafloor[®] 510

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. Sikafloor 510 is designed to be installed as a clear topcoat over a quartz or flake broadcast system where a low VOC, quick cure, flexible, UV resistance finish coat is necessary. Sikafloor 510 is available in clear or with Sikafloor Urethane Color Additive to achieve a variety of colors.

Where to Use Typically used in decorative applications, chemical storage areas, warehouses, washrooms, laboratories, food preparation areas and chemical process plants.

Advantages

- Resists a very wide range of organic and inorganic acids, alkalis, amines, salts and solvents. Refer to Chemical Resistance Chart.
- Cures quickly, fast turnaround
- Durable, impermeable and seamless
- Superior mechanical resistance.
- Excellent chemical resistance
- Superior aesthetic finish.
- Excellent UV resistance
- Low maintenance.
- Does not support growth of bacteria or fungus.
- High density prevents dirt penetration, which provides easy cleaning.
- Solvent-free.
- Meets USDA requirements for incidental food contact

TYPICAL DATA

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Packaging	Component A: 0.9 US gal. (3.4 L) Component B: 0.6 US gal. (2.3 L) Components A+B: 1.5 US gal. (5.7 L) (ready to mix unit)	Component A: 5 US gal. (18.9 L) Component B: 3.33 US gal. (12.6 L) Components A+B: 8.33 gal. (31.5 L)		
Color	Clear or pigmented with Sikafloor Urethane Color Additive; 1 quart (1.0 L) size.			
Coverage	Smooth Finish Coating: Prime coat: 160 - 200 ft ² / US gal (3.9 - 4.9 m ² / L) at 8 - 10 mils (0.20 - 0.25 mm) wet film thickness (w.f.t.) Wear coat: 105 - 135 ft ² / US gal (2.6 - 3.3 m ² / L) at 12 - 15 mils (0.30 - 0.38 mm) wet film thickness (w.f.t.)			
Pot Life	Material Temperature +50°F (23°C) +68°F (20°C) +86°F (30°C)	Time ~ 20 minutes ~ 15 minutes ~ 10 minutes *Pot Life is based on clear resin, Urethane color additives can shorten the working time of Sikafloor 510.		
Waiting / Recoat Times	Before applying second coat of Sikafloor 510 allow:			
	Ambient & Substrate Temperature	Minimum		
	+68°F (20°C)	90 minutes		
		Maximum		
		24 hours		
Cure Times	Ambient & Substrate Temperature	Foot traffic	Light traffic	Full cure
	+68°F (20°C)	~ 4 hours	~ 8 hours	~ 5 days
Properties Tested at 73°F (23°C) and 50% R.H:				
Tensile Strength	ASTM C307	6,500 psi		
Pull-off Strength	ASTM D1583	> 400 psi (2.7 MPa) (100% concrete failure)		
Shore D Hardness	ASTM D2240	75		
Coefficient of Friction	ASTM D1894-61T	0.8		
VOC Content	ASTM D2369	≤ 50 g/L		
Viscosity	Store dry between 50° - 77°F (10° - 25°C). Protect from freezing.			
Application Temperature	Component A + B mixed: 850 cps			
Shelf Life	40°F min., 85°F max. (4°C min., 30°C max.)			
Chemical Resistance	Components A+B: 1 year in original unopened packaging. Please consult Sikafloor Technical Services.			

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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 dressed off to achieve a level surface prior to the application. **Concrete** - Should be cleaned and prepared to achieve a laitance-free and contaminant-free, open textured surface by shot blasting or equivalent mechanical means (CSP-3 to CSP-4 as per ICRI guidelines). 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 topcoats. The "shotblast" pattern may show through the last coat, known as "tracking". The compressive strength of the concrete substrate should be at least 3,500 psi (24 MPa) at 28 days and at least 215 psi (1.5 MPa) in tension at the time of application. For other substrates, please contact Sikafloor Technical Services.

Priming

Priming for concrete substrate is required. Prime with either **Sikafloor 107, 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. In case of using Sikafloor 510 as primer extra precaution has to be taken on the substrate preparation and on the moisture content.

Mixing

Mixing Ratio - 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 for at least 3 minutes using a low speed drill (300 - 450 rpm) and 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 color is desired, the appropriate Sikafloor Urethane Color Additive is added to Component A at a rate of 1 quart per 3 mixed gallons (i.e. Components A+B) for all colors. Mix Component A and Sikafloor Urethane Color Additive for 2 minutes or until a uniform color is achieved with a low speed drill (300 - 450 rpm) and 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 additional 2 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.

***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 roll apply Sikafloor 510 to provide a uniform coverage without ponding at a thickness of 10 - 15 mils (160 - 107 ft²/gal). If required, repeat this procedure for a second coat.

As a clear topcoat for a broadcast quartz or flake system:

Squeegee and roll apply Sikafloor 510 to provide a uniform coverage without ponding at a thickness of 10 - 15 mils (160 - 107 ft²/gal). 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 at 5 - 10 mils (160 - 320 ft²/gal).

Note: When using Sikafloor 510 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 at a thickness of 10 - 15 mils (160 - 107 ft²/gal). Broadcast pre-blended decorative flakes or colored 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. Removal of excess flakes/aggregates is carried out by sweeping up the flakes/aggregates, followed by vacuuming, until surface is free of all loose particles and dust.



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Step 3: Second Broadcast Application - Squeegee and roll apply Sikafloor 510 to provide a uniform coverage without ponding at a thickness of 10 - 15 mils (160 - 107 ft²/gal). Broadcast pre-blended decorative flakes or colored 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. Removal of excess flakes/aggregates is carried out by sweeping up the flakes/aggregates, followed by vacuuming, until surface is free of all loose particles and dust.

Step 4: Finish Coat - Squeegee and roll apply Sikafloor 510 to provide a uniform coverage without ponding at a thickness of 10 - 15 mils (160 - 107 ft²/gal). When required, repeat this procedure for a second coat.

Limitations

Notes on Limitations:

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.).

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 81 EpoCem.

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 81 EpoCem.

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

Material Temperature: Precondition material for at least 24 hours between 65° to 75°F (18° to 24°C)

Ambient Temperature: Minimum/Maximum 50°/85°F (10°/30°C)

Substrate Temperature: Minimum/Maximum 50°/85°F (10°/30°C). Substrate temperature must be at least 5°F (3°C) above measured Dew Point.

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.

Relative Ambient Humidity: Minimum ambient humidity 30%

Maximum ambient humidity 75% (during application and curing)

Note: Low Relative Ambient Humidity may result in slower cure.

Dew Point: Beware of condensation!

The substrate 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. Be aware that the substrate temperature may be lower than the ambient temperature.

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.

Application: 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 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.
- Will discolor over time when exposed to sunlight (UV) and under certain artificial lighting conditions. 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.

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- 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 flow. Introduction of dust, debris, and particles, etc. may result in surface imperfections and other defects.
- For professional use only by experienced applicators.

Caution

COMPONENT A - WARNING: CORROSIVE, IRRITANT, SENSITIZER. Contains Aldimine (CAS 54914-37-3), Aspartic Ester (Trade Secret), Petroleum Distillates, Hydrotreated Light (CAS 64742-46-7). Contact with skin and eyes causes severe burns. Causes eye/skin/respiratory irritation. Prolonged and/or repeated skin contact may cause an allergic reaction/sensitization. Harmful if swallowed. Deliberate concentration of vapors for purposes of inhalation is harmful and can be fatal. Strictly follow all usage, handling and storage instructions.

COMPONENT B - WARNING: IRRITANT, SENSITIZER. Contains Homopolymer of 1, 6 Hexamethylene Diisocyanate (CAS 28182-81-2). Causes eye irritation/skin/respiratory irritation. May cause allergic skin/respiratory reaction/sensitization after prolonged and/or repeated contact. Harmful if swallowed. Deliberate concentration of vapors of for purposes of inhalation is harmful and can be fatal. Strictly follow all usage, handling and storage instructions.

First Aid

Eyes - Hold eyelids apart and flush thoroughly with water for 15 minutes. **Skin** - Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water. **Inhalation** - Remove to fresh air. Ingestion - Do not induce vomiting. Dilute with water. Contact physician. In all cases contact a physician immediately if symptoms persist.

Handling and Storage

Avoid direct contact with eyes and skin. Wear chemical resistant gloves/goggles/clothing. Avoid breathing vapors. Use with adequate general and local ventilation. In absence of adequate ventilation, use properly fitted NIOSH approved respirator. Wash thoroughly after handling product. Store in a cool, dry, well ventilated area. Keep containers tightly closed.

Clean Up

Wear chemical resistant gloves/goggles/clothing. In absence of proper ventilation use properly fitted NIOSH respirator. Uncured material can be removed with approved solvent. Follow solvent manufacturer's instructions for use and warnings. Cured material (when Component 'A' combined with Component 'B' and Component 'C') can only be removed mechanically. In case of spill, ventilate area and contain spill. Collect with absorbent material (Component 'A' and Component 'B') and place in properly sealed container. Shovel Component 'C' into approved container. Dispose of in accordance with current applicable local, state and federal regulations.

KEEP CONTAINER TIGHTLY CLOSED • KEEP OUT OF REACH OF CHILDREN • NOT FOR INTERNAL CONSUMPTION • FOR INDUSTRIAL USE ONLY

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Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKASHALL NOT BELIEABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKASHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

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