

## PRODUCT DATA SHEET

# Sikafloor®-24 NA PurCem®

ADVANCED GENERATION SELF LEVELING THIN LAYER POLYURETHANE CEMENTIOUS SLURRY FOR GENERAL INDUSTRIAL AND COMMERCIAL USE

### PRODUCT DESCRIPTION

Sikafloor®-24 NA PurCem® is a state of the art, phthalate-free, water dispersed polyurethane based/cement and aggregate screed, applicable at thicknesses ranging from 80 to 160 mils (2 to 4 mm). It is designed to be installed as a self leveling floor topping that provides an easy-to-clean, smooth surface with slip resistance and is typically used for general, industrial applications. Sikafloor®-24 NA PurCem® represents superior polyurethane/cement technology, combining easier application, resistance to blistering and improved performance.

### USES

Sikafloor®-24 NA PurCem® may only be used by experienced professionals.

- Typically used in areas of medium to heavy loading and abrasion, to provide a smooth, flat and thin self-leveling layer in general industrial areas, including warehouses, production facilities, laboratories and workshops, either with or without a Sikafloor® sealer top coat.
- As thin layer, flat but slip-resistant screed in commercial environments, with a suitable UV-stable Sikafloor sealer for retention of aesthetics.
- As broadcast receiving coat, slip-resistant screed in commercial environments, with a suitable UV-stable Sikafloor sealer for retention of aesthetics.
- When used as a base for MVT system, total thickness must be 1/8-inch (3.2mm).

### CHARACTERISTICS / ADVANTAGES

- Can be applied on green concrete, typically 7-10 days. Full 28 days cure time is not necessary.
- Can be applied over partially cured concrete substrates (> 4% mass (pbw –part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter surface moisture).
- Can be applied to concrete substrates where <100 % relative humidity is measured as per ASTM F2170.
- Resists a very wide range of organic and inorganic acids, alkalis, amines, salts and solvents. Consult Sika Technical Service for full details. Refer to the Sikafloor - 24 NA Purcem Chemical Resistance Chart.
- Similar coefficient of thermal expansion to concrete allowing movement with the substrate through normal thermal cycling. It will perform and retain its physical characteristics through a wide temperature range from -40 °F (-40 °C) up to 248 °F (120 °C).
- Steam cleanable at 80 to 160 mils (2 to 4 mm) thickness.
- Non-tainting, odorless.
- Behaves plastically under impact / deforms but will not crack or debond.
- High abrasion qualities result from its aggregate structure.
- Extra Expansion joints are not necessary; maintain and extend existing expansion joints up through the Sikafloor PurCem Flooring System.
- Minimal maintenance costs, superior life cycle cost advantage versus tile.
- Meets the requirements of USDA for use in food plants.

## PRODUCT INFORMATION

<b>Packaging</b>	<b>Component A:</b>	1 US gal (3.78 L) 8.53 lb (3.87 kg)
	<b>Component B:</b>	0.7 US gal (2.64 L) 7.33 lb (3.325 kg)
	<b>Component C:</b>	45.21 lbs (20.51 kg) in a bag (powder)
	<b>Mix Units 2A + 2B + 1C:</b>	76.87 lb (34.87 kg) (5.33 US gal)
<b>Appearance / Color</b>	RAL 7012 Basalt Gray RAL 7038 Agate Gray RAL 7042 Traffic Grey RAL 3009 Oxide Red RAL 1001 Beige	
<b>Shelf Life</b>	Components A, B and C: 1 year in original unopened packaging. Store dry between 50°- 77°F (10°- 25°C).	
<b>Storage Conditions</b>	Protect from freezing. If frozen, discard product . Condition material for at least 24 hours to 65 - 75°F (18 - 24°C) before use.	
<b>Density</b>	14.45 lb/US gal. (1.73 kg/L)	ASTM C905 at 73°F (23°C) and 50% R.H
<b>Volatile organic compound (VOC) content</b>	5 g/l	Components A+B+C
<b>Shore D Hardness</b>	83	ASTM D2240 at 73°F (23°C) and 50% R.H
<b>Indentation</b>	~ 0%	MIL -PRF -24613 at 73°F (23°C) and 50% R.H
<b>Abrasion Resistance</b>	CS-17/1000 cycles/1000 g (2.2 lb) 0.07 g loss H-22/1000 cycles/1000 g (2.2 lb) 0.24 g loss	ASTM D4060 73°F (23°C) and 50% R.H
<b>Compressive Strength</b>	6,961psi (48 MPa) 28 days	ASTM 579 73°F (23°C) and 50% R.H
<b>Flexural Strength</b>	2,726 psi (18.8 MPa)	ASTM C580 at 73°F (23°C) and 50% R.H
<b>Modulus of Elasticity in Flexure</b>	2.71 x 10 <sup>5</sup> psi (1.87 x 10 <sup>3</sup> MPa ) 14 days	ASTM C580 at 73°F (23°C) and 50% R.H
<b>Tensile Strength</b>	1,290 psi (8.9 MPa)	ASTM C307 at 73°F (23°C) and 50% R.H
<b>Tensile Adhesion Strength</b>	>400 psi (2.75 MPa) Pull-off Strength	ASTM D 4541 at 73°F (23°C) and 50% R.H
<b>Shrinkage</b>	0.248%	at 73°F (23°C) and 50% R.H
<b>Coefficient of Thermal Expansion</b>	3.02 x 10 <sup>5</sup> in/in/°F (5.43 x 10 <sup>5</sup> mm/mm/°C) 0.248%	ASTM D696 at 73°F (23°C) and 50% R.H
	<b>Coefficient of Friction</b> Meets minimum of 0.42	ANSI A326.3 at 73°F (23°C) and 50% R.H
<b>Reaction to Fire</b>	Class I	ASTM E-684 With Sikafloor 31NA Top Coat or Sikafloor 217 or 510N LPL Top coat
<b>Chemical Resistance</b>	Please consult Sikafloor Technical Services.	

<b>Microbiological Resistance</b>	Resistance to Fungi Growth Rated 0 (no growth)		ASTM G21 at 73°F (23°C) and 50% R.H.	
	Resistance to Mold Growth Rated 10 (highest resistance)			
<b>Thermal Compatibility</b>	Pass		ASTM C884 at 73°F (23°C) and 50% R.H	
<b>Water Absorption</b>	0.10%		ASTM C413 at 73°F (23°C) and 50% R.H	
<b>Service Temperature</b>	14°F (-10°C) min / 248°F (120°C) max			
<b>Softening point</b>	266°F (130°C)			
<b>Coverage</b>	Sikafloor®-24 NA PurCem®			
	Scratch coat:	Where surface/substrate profile requires such. Not required under full quartz broadcast Approx. 215 ft <sup>2</sup> /unit (20 m <sup>2</sup> /unit) @ 40 mils (1 mm) per coat)		
	Screed:	These figures do not allow for surface porosity, profile or wastage Approx. 107 ft <sup>2</sup> (10 m <sup>2</sup> ) per unit at 80 mils (2 mm) Approx. 85 ft <sup>2</sup> (7.9 m <sup>2</sup> ) per unit at 100 mils (2.5 mm) Approx. 71 ft <sup>2</sup> (6.6 m <sup>2</sup> ) per unit at 120 mils (3 mm)		
	Broadcast Application:	Primer/Scratch Coat (where surface/substrate profile requires Body Coat: Approx. 107 ft <sup>2</sup> (10 m <sup>2</sup> ) per unit at 80 mils (2 mm) Broadcast to excess		
<b>Pot Life</b>	<b>Material Temperature</b>	<b>Time</b>		
	+ 50°F (10°C)	~ 25 - 30 minutes		
	+ 68°F (20°C)	~ 15 - 20 minutes		
	+ 86°F (30°C)	~ 5 - 10 minutes		
<b>Cure Time</b>	<b>Substrate Temperature</b>	<b>Light traffic</b>	<b>Foot traffic</b>	<b>Full cure</b>
	+50°F (10°C)	~ 24 hours	~ 48 hours	~ 10 days
	+68°F (20°C)	~ 12 hours	~ 24 hours	~ 7 days
	+86°F (30°C)	~ 6 hours	~ 18 hours	~ 5 days
<b>Waiting / Recoat Times</b>	Before applying Sikafloor-24NA PurCem when a scratch primer and sealer coat is used allow.			
	<b>Ambient &amp; Substrate Temperature</b>	<b>Minimum</b>	<b>Maximum</b>	
	+50°F (10°C)	24 hours	7 days	
	+68°F (20°C)	6 hours	3 days	
	+86°F (30°C)	4 hours	2 days	

## SURFACE PREPARATION

Concrete surfaces must be clean and sound. Remove all dust, dirt, existing paint films, efflorescence, exudates, laitance, form oils, hydraulic or fuel oils, brake fluid, grease, fungus, mildew, biological residues or any other contaminants which may prohibit a good bond.

Prepare the surface by any appropriate mechanical means, in order to achieve a profile equivalent to ICRI - CSP 3-6. The compressive strength of the concrete substrate should be at least 3,625 psi (25 MPa) at 28 days and a minimum of 218 psi (1.5 MPa) in tension at the time of application.

Repairs to cementitious substrates, filling of blowholes, leveling of irregularities, etc. should be carried out using an appropriate Sika profiling mortar. Contact Sika Technical Service for a recommendation.

### Edge Terminations

All free edges of a Sikafloor PurCem floor, whether at the perimeter, along gutters or at drains, require extra anchorage to distribute mechanical and thermal stresses. This is best achieved by forming or cutting grooves in the concrete. Grooves should have a depth and width of 2 times thickness of the Sikafloor PurCem floor. Refer to the edge details provided at <http://usa.sika.com>.

If necessary, protect all free edges with mechanically attached metal strips. Do not featheredge, always turn into an anchoring groove.

### Expansion Joints

Should be provided in the substrates at the intersection of dissimilar materials. Isolate areas subject to thermal stresses, vibration movements, or around load-bearing columns and at vessel sealing rings. Refer to details provided at <http://usa.sika.com>.

## MIXING

**Mix Ratio** Components A : B : C (2A : 2B : 1C)

**Note:** Mix full units only

Mixing will be affected by temperature; condition materials for use to 65 to 75°F (18 to 24°C) for at least 24 hours before use.

Use a low speed drill (300-450 rpm) and Exomixer-type mixing paddle (recommended) suited to the size of mixing container to minimize air entrapment.

Pre-agitate component A separately, making sure all solids, including pigments, are uniformly distributed. Start mixer; add component A and component B, blending for 30 seconds. Add component C (powder) pouring slowly over a period of 20 seconds.

**DO NOT DUMP POWDER INTO RESIN, ADD GRADUALLY.** Allow component C to further blend for 2 1/2 more minutes after all of the powder is emptied into the resin to ensure all powder is wetted out and a completely uniform mix is achieved.

During the mixing operation, and observing good safety practices, ie turning off and removing revolving parts, scrape down the sides and bottom of the mixing container with a flat or straight edge trowel at least once to ensure complete blending of components A + B + C.

**Note:** 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.

## APPLICATION

Priming of concrete substrates is not usually required under typical circumstances. However, due to variations in concrete quality, surface conditions, surface preparation and ambient conditions, reference test areas are recommended to determine whether priming is required to prevent the possibility of blisters, debonding, pinholes and other aesthetic variations. Note: Given the fluidity and relatively thin-layer installation of Sikafloor®-24 NA PurCem® a primer for porous substrates or a scratch coat where the surface profile demands such, are highly recommended.

### Smooth Application

For smooth applications, a primer or scratch is required  
**Primer** - Mix and apply a primer coat of Sikafloor-31NA PurCem at a consumption of approximately 165 ft<sup>2</sup>/unit (15.3 m<sup>2</sup>/unit) per coat to achieve a complete 10 mils d.f.t. coverage of the substrate, using a short or medium nap roller. Work the priming resin well into the surface, making sure the floor is fully wetted and then pull back lightly with the roller to the required thickness. Prime retaining (anchor) grooves but do not fill. Allow a cure period of at least 3 hours at 68°F (20°C) before application of the smooth screed mortar.

### Scratch Coat (optional)

Where the surface profile requires such and where a flat floor is intended, mix and apply a scratch coat of Sikafloor®-24 NA PurCem® using steel trowels to spread the materials at a consumption of approximately 215 ft<sup>2</sup>/unit (20 m<sup>2</sup>/unit) per unit, achieving a minimum 40 mils (1 mm) thickness. This application must be applied to seal the concrete surface, fill in surface irregularities; including pock marks, non-moving control joints and cracks.

(Note: Should the scratch coat at 40 mils (1 mm) not fill and level the irregularities, additional coats can be applied, observing the necessary inter-coat curing times). Allow a cure period of at least 3 hours at 68°F (20°C) before application of the screed.

### Smooth Screed

Mix and pour the Sikafloor®-24 NA PurCem® onto the floor. Spread to the desired thickness, from 80 - 160 mils (2 - 4 mm), at approximate consumptions of 107 ft<sup>2</sup> (10 m<sup>2</sup>) per unit at 80 mils (2 mm) to 53.5 ft<sup>2</sup> (5 m<sup>2</sup>) per unit at 160 mils (4 mm), using a notched trowel or pin or cam gauge rake. **Note:** Take care to spread freshly mixed materials across the transition of previously applied mixes before the previously applied material begins to set. Immediately spike roll the surface to release trapped air in the matrix. Roller spikes must be at least three times longer than the applied product thickness. Allow a minimum 18 hours cure period at 68°F (20°C) before foot traffic.

### Broadcast Application 125 mils (3 mm) Primer

Priming or scratch coat of concrete substrates is not usually required under typical circumstances. However, due to variations in concrete quality, surface conditions, surface preparation and ambient conditions, reference test areas are recommended to determine whether priming is required to prevent the possibility of blisters, debonding, pinholes and other aesthetic variations. For a primer, use either Sikafloor-31NA PurCem FS or Sikafloor®-24 NA PurCem® Scratch Coat.

### Screed

Mix and pour the Sikafloor®-24 NA PurCem® materials on the floor. Spread mixed material to approximately 107 ft<sup>2</sup> (10 m<sup>2</sup>) per unit at 80 mils (2 mm) using a screed gauge rake or trowel. Take care to spread newly mixed materials across the transition of previously applied mixes before the surface begins to set. Immediately spike roll the surface to release trapped air in the matrix. Broadcast selected aggregate to rejection. Aggregate must fall vertically to avoid surface defects / do not broadcast up to the transition line of new mixes, always broadcast 2 - 3 feet beyond the wet edge. Allow broadcast surface to cure sufficiently to be able to resist foot traffic without damaging the surface. Remove excess aggregate by sweeping or vacuuming until surface is free of all loose particles and dust.

A topcoat of Sikafloor-31NA PurCem or other topcoats depending on applications can be applied to lock in the aggregate. Allow a minimum 24 hour cure period at 68°F (20°C) before light traffic after the Sikafloor-31NA PurCem is applied.

## BASIS OF PRODUCT 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.

## 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.).

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

IMPORTANT: Product must be protected from freezing. If frozen, discard in a responsible manner in accordance with local, state and federal law

**Ambient Temperature:** Minimum/Maximum 40°/85°F (4°/30°C).

**Substrate Temperature:** Minimum/Maximum 40°/85°F (4°/30°C). Substrate temperature must be at least 5°F (3°C) above measured Dew Point.

Mixing and Application must adhere to Material, Ambient and Substrate temperatures listed above or a decrease in product workability and slower cure rates will occur. Relative Ambient Humidity: Minimum ambient humidity 30%.

**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. Calculate Dew Point from the substrate surface temperature, not 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. Under no circumstance should thinners be added to the mix. Adding thinners will void any applicable Sika warranty.

- Do not apply to polymer modified cement mortars (PCC) that may expand when sealed with an impervious resin.
- Do not apply to water-soaked, glistening-wet concrete substrates. (i.e. standing water)
- Do not apply to un-reinforced sand cement screeds, asphaltic or bitumen substrate, glazed tile or non-porous brick, tile and magnesite, copper, aluminum, soft wood, or urethane composition, elastomeric membranes, fiber reinforced polyester (FRP) composites.
- Do not apply to cracked or unsound substrates.

- Do not apply while ambient and substrate temperatures are rising, as pinholes may occur.
- Freshly applied material should be protected from dampness, condensation and water for at least 24 hrs. Protect substrate during application from condensation from pipes or any overhead leaks.
- Protect applied product from exposure to uncured cement products; masonry mortar, drywall compound. Exposure will result in staining that can not be removed.
- Do not apply to surfaces where moisture vapor can condense and freeze.
- Do not apply to vertical or overhead surfaces/ for vertical surfaces refer to Sikafloor-29NA PurCem.
- Do not featheredge.
- Applied material will follow undulations, depressions, lines, etc. of the underlying substrate. Visual appearance of the finished floor may vary, including, but not limited to reflection.

## ENVIRONMENTAL, HEALTH AND SAFETY

Transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887

## OTHER RESTRICTIONS

See Legal Disclaimer.

## LEGAL DISCLAIMER

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

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at [usa.sika.com](http://usa.sika.com) or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

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 the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL 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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