

PRODUCT DATA SHEET

Sikafloor[®]-22 NA PurCem[®] FS

ADVANCED GENERATION, FAST SET, SELF LEVELING BROADCAST CEMENTITIOUS URETHANE SLURRY

PRODUCT DESCRIPTION

Sikafloor[®]-22 NA PurCem[®] FS is a self-leveling, solid color, three component, cementitious urethane slurry designed to provide excellent resistance to abrasion, impact, and chemical attack. Sikafloor[®]-22 NA PurCem[®] FS is broadcast with dried quartz sand and sealed with Sikafloor 31NA FS PurCem to produce a solid color finish, or can be broadcasted with colored quartz aggregate and sealed with Sikafloor resinous flooring products for a decorative finish. The system is typically installed at 3/16" to 1/4" (188 to 250 mils) thickness.

USES

Sikafloor[®]-22 NA PurCem[®] FS may only be used by experienced professionals.

- Sikafloor 22NA PurCem is primarily used to protect concrete substrates in aggressive environments.
- Food processing plants, wet and dry process areas, kitchen and oven areas, freezers and coolers, dairies, breweries, wineries, distilleries, laboratories, chemical process plants, pulp and paper plants, warehouses and storage areas and pharmaceutical facilities.

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 - 22 NA Purcem FS 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 3/16 to 1/4 inch (188 to 250 mils) 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

Packaging	Component A :	1 US gal (3.78 L) 8.53 lb (3.87 kg)
	Component B :	0.7 US gal (2.64 L) 7.33 lb (3.325 kg)
	Component C:	43.96 lbs (19.94 kg) in a bag (powder)
	Components A+B+C:	59.83 lb (27.14 kg)
Appearance / Color	RAL 7042 Traffic Grey RAL 3009 Oxide Red	
Shelf Life	Components A & B: 1 year in original unopened packaging. Component C: 6 months in original unopened packaging.	
Storage Conditions	Store dry at temperatures between 50 °F and 77 °F (10 and 25 °C) and protect from freezing.	
Density	16.84 lb/US gal. (2.02 kg/L)	ASTM C905 at 73°F (23°C) and 50% R.H
Volatile organic compound (VOC) content	44 g/l	A+B+C Components
Shore D Hardness	80-85	ASTM D2240 at 73°F (23°C) and 50% R.H
Indentation	~ 0%	MIL -PRF -24613 at 73°F (23°C) and 50% R.H
Impact Strength	5.02 ft - lb (6.81 joules)	ASTM D2794 at 73°F (23°C) and 50% R.H
Abrasion Resistance	CS-17/1,000 cycles/1,000 g -0.11 g loss H-22/1,000 cycles/1,000 g -2.26 g loss	ASTM D4060 at 73° F (23° C) and 50% R.H
Compressive Strength	5,802 psi (40 MPa) 28 days	ASTM C579 at 73°F (23°C) and 50% R.H
Flexural Strength	2,314 psi(14.7 MPa)	ASTM C580 at 73° F (23° C) and 50% RH
Modulus of Elasticity in Flexure	2,71 x10 ⁵ psi(18.7 x10 ³ MPa)	ASTM C 580 at 73° F (23° C) and 50% RH
Tensile Strength	1,045 psi (6.5 MPa) 28 days	ASTM C307 at 73°F (23°C) and 50% R.H
Tensile Adhesion Strength	>400 psi 2.75 MPa) Pull -off Strength (substrate failure)	ASTM D4541 at 73° F (23° C) and 50% R.H
Coefficient of Thermal Expansion	0.89 x 10 ⁵ in/in/°F (1.6 x10 ⁵ mm/mm/°C)	ASTM D696 at 73°F (23°C) and 50% R.H
	Coefficient Friction 0.77	ANSI A326.3 at 73°F (23°C) and 50% R.H

Chemical Resistance	Please consult Sikafloor Technical Services.		
Microbiological Resistance	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)		ASTM D3273 at 73°F (23°C) and 50% R.H
Water Absorption	0.10%		ASTM C413 at 73°F (23°C) and 50% R.H
Thermal Resistance	Pass		ASTM C884 at 73° F (23° C) and 50% RH
Service Temperature	-40°F (-40°C) up to 248°F (120°C).		
Softening point	266°F (130°C)		

APPLICATION INFORMATION

Mixing Ratio	Components A : B : C = Mix full units only			
Ambient Air Temperature	Minimum/Maximum 40°/85°F (4°/30°C)			
Coverage	Approx. 37 ft ² (3.44 m ²) per unit at 160 mils (4 mm) Approx. 31 ft ² (2.87 m ²) per unit at 3/16" (4.75 mm) Approx. 25 ft ² (2.32 m ²) per unit at 1/4" (6 mm) (The above figures do not allow for surface porosity, profile or waste)			
Substrate Temperature	Minimum/Maximum 40°/85°F (4°/30°C)			
Pot Life	Material Temperature	Time		
	+50°F (10°C)	~25-30 minutes		
	+68°F (20°C)	~15-20 minutes		
	+86°F (30°C)	~ 5-10 minutes		
Cure Time	Temperature:	Foot traffic	Light traffic	Full cure
	+50°F (10°C)	~18 hours	~ 24 hours	~ 6 days
	+68°F (20°C)	~ 6 hours	~ 18 hours	~ 4 days
	+86°F (30°C)	~ 4 hours	~12 hours	~ 3 days
Waiting / Recoat Times	Before applying Sikafloor®-22 NA PurCem® FS when a scratch primer and sealer coat is used allow:			
	Ambient & Substrate Temperature	Minimum	Maximum	
	+50°F (10°C)	~ 4 hours	~ 24 hours	
	+68°F (20°C)	~ 3 hours	~ 18 days	
	+86°F (30°C)	~ 3 hours	~ 12 days	

APPLICATION INSTRUCTIONS

SURFACE PREPARATION

Concrete surfaces must be clean and sound. Remove all dust, dirt, existing paint films, efflorescence, exudates, laitance, forms oils, hydraulic or fuel oils, brake fluid, grease, fungus, mildew, biological residues or any other contaminants which may prohibit 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 tensile at the time of application.

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 a recommendation.

level the irregularities, additional coats can be applied, observing the necessary intercoat curing times.) Allow a cure period of at least 3 hours at 20°C (68°F) before application of the screed.

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 anchor groove.

Expansion Joints

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>.

Primer

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.

Standard Primer

Mix and apply a primer coat of Sikafloor-31NA PurCem FS at a yield of approximately 165 ft²/unit (15.3 m²/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 saturated 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 screed mortar.

Scratch Coat (in place of Standard Primer)

Where the surface profile requires heavier filling, mix and apply a scratch coat of Sikafloor-24 NA PurCem FS using steel trowels to spread the materials at a consumption of approximately 215 ft²/unit (20 m²/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

MIXING

Mix Ratio: Components A : B : C = 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.

A 'Kol' type mixer, incorporating a motor spun mixing pail and a shear angle mixing blade, is recommended. Alternatively, 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. Cool Substrates: Application attempted at material, ambient and substrate temperatures below 65°F (18°C) will result in a decrease in product workability and slower cure rates. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

APPLICATION

Mix and pour the Sikafloor®-22 NA PurCem® FS materials on the floor. Spread to the desired thickness (160 mils - 1/4") using a screed gauge rake or trowel. Take care to spread newly mixed materials across the transition of previous applied mixes before the surface begins to set. Immediately spike roll the surface to release trapped air in the matrix. Sikafloor®-22 NA PurCem® FS requires the wet surface to be broadcast to rejection with quartz or mineral aggregates. 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 FS can be applied to lock in the aggregate. Allow a minimum 18 hour cure period at 68°F (20°C) before light traffic after the Sikafloor 31NA PurCem FS is applied.

Sikafloor®-22 NA PurCem® FS Colored Quartz

Application method is the same as described above. Instead of a topcoat of Sikafloor 31NA PurCem FS, seal the surface using a clear polyaspartic; Sikafloor 511 (see product data sheets). Apply Sikafloor 511 top coat by squeegee and roller to provide a uniform coverage without ponding. When required, apply a second coat to achieve a specific texture. Allow a minimum 18 hour cure period at 68°F (20°C) before light traffic. Please refer to the individual most current and respective Product Data Sheet for specific and detailed information.

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

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.

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 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.

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