BUILDING TRUST

PRODUCT DATA SHEET

Sikafloor®-19 NA PurCem® FS

ADVANCED GENERATION FAST SET TROWEL APPLIED CEMENTITIOUS URETHANE MORTAR

PRODUCT DESCRIPTION

Sikafloor®-19 NA PurCem® FS is a trowel grade, solid color, three-component, water dispersed polyurethane based cement and aggregate mortar, designed to provide excellent resistance to abrasion, impact, chemical attack and other physical aggression. Sikafloor®-19 NA PurCem® FS can be textured aggregate surface providing moderate slip resistance. Sikafloor®-19 NA PurCem® FS Broadcast can be broadcasted with aggregate texture for increased slip resistance. Both systems are typically installed at 1/4" to 3/8'' (250 to 375 mils) thickness.

USES

Sikafloor®-19 NA PurCem® FS may only be used by experienced professionals.

- Sikafloor®-19 NA PurCem® FS is primarily used to protect concrete substrates in severe environments.
- Typically used in food processing plants, wet and dry process areas, freezers and coolers, thermal shock areas, dairies, breweries, wineries, distilleries, laboratories, chemical process plants, pulp and paper plants, warehouses and storage areas.

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.
- Substrate has tensile bond strength in excess of 218 psi (1.5 MPa). Substrate has tensile bond strength in excess of 218 psi (1.5 MPa).
- 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 - 19 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 1/4" to 3/8' (250 to 375 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:	(2) x 39.66 lb. (18.02 kg) in bags (powder)
	Components A+B+C:	95.18 lb (43.17 kg)
Appearance / Color	RAL 7042 Traffic Grey RAL 3009 Oxide Red	
Shelf Life	Components A + B + C: 12 months in original unopened packaging.	
Storage Conditions	Store dry at temperatures between 50 and 77 °F (10 and 25 °C) and protect from freezing.	
Density	17.8 lb/US gal (2.14 kg/L)	ASTM C905 at 73° F (23° C) and 50% R.H
Volatile organic compound (VOC) content	5 g/l	Components A+B+C
Shore D Hardness	82	ASTM D2240 at 73° F (23° C) and 50% R.H
Indentation	MIL-PRF -24613	~ 0% at 73° F (23° C) and 50% R.H
Impact Strength	4.18 ft/lb (5.67 Joules)	ASTM D2794 at 1/8'' (3 mm) of thickness at 73° F (23° C) and 50% R.H
Abrasion Resistance	CS-17/1,000 cycles/1,000 g -0.155 g loss H-22/1,000 cycles/1,000 g -2.18 g loss	ASTM D4060 at 73° F (23° C) and 50% R.H
Compressive Strength	6,050 psi (41.7 MPa) 28 days	ASTM 579 at 73° F (23° C) and 50% R.H
Flexural Strength	1,572 psi (10.8 MPa)	ASTM C580 at 73° F (23° C) and 50% R.H
	Flexural Modulus 6.29 x 10^5 psi (4.34 x 103 MPa)	ASTM C580 at 73° F (23° C) and 50% R.H
Modulus of Elasticity in Flexure	6.29 x 105 psi (4.34 x 103 MPa)	ASTM C580 at 73° F (23° C) and 50% R.H
Tensile Strength	540 psi (3.7MPa)	ASTM C307 at 73° F (23° C) and 50% R.H
Tensile Adhesion Strength	Pull -off Strength >254 psi (> 1.75 MPa) (substrate failure)	ASTM D4541 at 73° F (23° C) and 50% R.H
Coefficient of Thermal Expansion	1.06 x 10^5 in/in/°F (1.9 x 10^5 mm/mm/°C)	ASTM D696 at 73° F (23° C) and 50% R.H
Microbiological Resistance	Resistance to Fungi Growth 0 (no growth)	ASTM G21 at 73° F (23° C) and 50% R.H
	Resistance to Mold Growth 10 (highest resistance)	ASTM D3273 at 73° F (23° C) and 50% R.H
Water Absorption	0.28%	ASTM C413 at 73° F (23° C) and 50% R.H
Thermal Resistance	Pass	ASTM C884 at 73° F (23° C) and 50% R.H

Service Temperature	-40°F (- 40°C) min. / 248°F (120°C) max.	
Softening point	266 °F (130 °C)	at 73° F (23° C) and 50% R.H
Water Penetration under Negative Pressure	0.28%	ASTM C413 at 73° F (23° C) and 50% R.H
Mixing Ratio	Components A : B : C ("C" Consist of two bags of 39.7 lbs each) = Mix full units only	
Ambient Air Temperature	Minimum/Maximum 40˚/85˚F (4˚/30˚C)	
Coverage	Approx. 31 ft2 (2.8 m2) per unit at 1/4" (6 mm) Approx. 20 ft2 (1.8 m2) per unit at 3/8" (9 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)	~ 10 hours	~ 18 hours	~ 4 days
+86°F (30°C)	~ 4 hours	~ 12 hours	~ 2 days

Waiting / Recoat Times

Before applying Sikafloor®-19 NA PurCem® FS when a scratch primer is used allow:

Substrate Temperature	Minimum	Maximum
+50°F (10°C)	~ 4 hours	~ 6 days
+68°F (20°C)	~ 3 hours	~ 4 days
+86°F (30°C)	~ 3 hours	~ 2 days

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 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 the thickness of the Sikafloor PurCem floor. Contact Sikafloor Technical Service for more information and construction details. If necessary, protect all free edges with mechanically attached metal strips. Do not featheredge, always turn into an anchor groove.

Expansion Joints

Expanshion 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.

Priming
Substrate priming is normally not required under typical circumstances. Compressive strength of the concrete substrate of at least 3,625 psi (25 MPa) and at least 218 psi (1.5 MPa) in tensile is required. However, due to variations in concrete quality, surface conditions, surface preparation and ambient conditions, test areas are recommended to determine whether priming is required to prevent the possibility of blisters, debonding, pinholes and other aesthetic variations.
Standard primer procedure consists of a 40 – 60 mils (1.0 - 1.5 mm) scratch coat of Sikafloor-31NA FS/24NA PurCem FS and light broadcasting of dry quartz sand. This is the preferred method for concrete substrates. The application is carried out using a steel trowel, ensuring a continuous coating is achieved.

MIXING

Mix Ratio: Components A : B : C ("C" Consist of two bags of 39.7 lbs each)
Mix full units only

A "Kol" type mixer, incorporating a motor spun mixing pail and a shear angle mixing blade, or a forced action mixer is recommended. Mixing will be affected by temperature; condition materials for use to 65 - 75º F (18 - 24º C). Premix component A , make sure all pigment is evenly distributed. Pour component A and B into a clean mixing bucket and mix for 30 seconds. Add component C (powder) pouring slowly over a period of 20 seconds.

Note: Do not dump powder into resin! Allow component C to blend for an additional 2-1/2 minutes after all powder is emptied into the resin to ensure complete mixing and that all powders are evenly distributed. During the mixing operations, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure complete mixing (Components A+B+C). **Note:** Improved flowability on cool substrates can be achieved by removing a maximum of 2.2 lb (1.0 kg) of component C (powder) per unit.

Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at the actual field temperature.

APPLICATION

Sikafloor®-19 NA PurCem® FS trowel grade materials are applied with standard steel plastering or cement-finishing trowel 12 x 4 in (30 x 10 cm). Do not use serrated hand trowels. Pour the material from the mixing pail, working to terminations or along the wet edge of previous pours. Using considerable top pressure on the trowel, spread material from side to side, pushing back into the previous mix (wet edge), pulling forward to establish the thickness and then, with a lighter pressure, trowel from side to side to close up. The last few strokes should always be in one direction only, left to right or right to left, but never back and forth. Excessive trowelling will bring the resin to the surface reducing the anti-slip surface.

Screed box applicators may be used with Sikafloor®-19 NA PurCem® FS. It is recommended to not use screed boxes greater than 24-inch width. Mix and apply materials as outlined above in Mixing and Application. Sikafloor®-19 NA PurCem® FS Broadcast requires quartz color aggregate to be broadcast on to the wet surface. Evenly distribute the matching solid color aggregate by hand, covering all areas to avoid bald spots. Allow a minimum 10 hours cure at 68°F (20°C) before foot traffic. Alternatively, selected mineral aggregates can be broadcast on to the wet surface and sealed with a top coat of Sikafloor®-31 NA PurCem® FS to lock in the aggregate. This application method requires a minimum 14 hours cure period at 68°F (20°C) before foot traffic, see Sikafloor®-31 NA PurCem® FS Product Data Sheet.

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.

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.

OTHER RESTRICTIONS

See Legal Disclaimer.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding 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.

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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