

Product Data Sheet
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Sikafloor®-31NA PurCem

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Solvent-free, High Build, Cementitious Urethane Coating

Industrial Flooring

Description Sikafloor-31NA PurCem is a three-component, solvent-free, high-build, colored, matt finish. Coating based on the unique Sikafloor PurCem water dispersed polyurethane/cement and aggregate technology. Typically installed as stand alone coating for concrete substrates or used as a top coat for Sikafloor PurCem broadcast textured finishes. It provides an economical solution that has excellent chemical resistance properties and very good durability against abrasion and mechanical damage. Installed thickness 15-20 mils per coat.

Where to Use

- As a high build coating.
- As a chemical resistant concrete coating.
- Typically used in food processing plants, chemical storage areas, warehouses, washrooms, laboratories, food preparation areas and chemical process plants.

Advantages

- Can be applied onto Green Concrete (typically 7 -10 days) after adequate preparation and where substrate has tensile bond strength in excess of 218 psi (1.5 MPa).
- 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 Sales for full details. Refer to the Sika PurCem Chemical Resistance Chart.
- Non-taint, odorless.
- Good wear resistance from a two coat application, if used as a stan-alone coating.
- Economical and easy to apply.
- Can be applied over partially cured concrete substrates (<10% surface moisture), full 28 days cure t time is not necessary.
- Minimal maintenance costs, superior life cycle cost advantage versus tile.
- Achieves highest performance ratings according to ASTM G21 resistance to fungi and ASTM D3273 resistance to mold growth.
- Meets the requirements of USDA for use in food plants.

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: 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: 1 US gal (3.78 L) 8.53 lb (3.87 kg) Components A+B+C: 24.38 lb (11.06 kg)			
Colors	Standard colors: RAL 7046 Telegray 2 RAL 3009 Oxide Red RAL 7038 Agate Gray RAL 7042 Traffic Grey A One standard, non stocking color that requires lead time: RAL 1001 Beige Custom colors subject to minimum orders. Certain color may require lead time			
Coverage	Approx. 168 ft ² (15.6 m ²) per unit at 20 mils (0.50 mm) (The above figure is measured on a 20/40 broadcast aggregate, different aggregate size will influence the material consumption)			
Pot Life	Material Temperature	Time		
	+50°F (10°C)	~ 30 - 35 minutes		
	+68°F (20°C)	~ 20 - 25 minutes		
	+86°F (30°C)	~ 10 - 15 minutes		
Waiting / Recoat Times	Waiting time between coats of Sikafloor PurCem-31NA:			
	Ambient & Substrate Temperature	Minimum	Maximum	
	+50°F (10°C)	24 hours	7 days	
	+68°F (20°C)	12 hours	3 days	
	+86°F (30°C)	6 hours	2 days	
Cure Times	Ambient & Substrate Temperature	Foot traffic	Light traffic	Full cure
	+50°F (10°C)	~ 24 hours	~ 6 days	~ 10 days
	+68°F (20°C)	~ 12 hours	~ 4 days	~ 7 days
	+86°F (30°C)	~ 6 hours	~ 2 days	~ 5 days



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Properties Tested at 73°F (23°C) and 50% R.H.

Softening Point		266°F (130°C)
Density	ASTM C905	11.68 lb/US gal. (1.40 kg/L)
Tensile Strength	ASTM C307	1,552 psi (10.7 MPa)
Flexural Strength	ASTM C580	3,582 psi (24.7 MPa)
Pull-off Strength	ASTM D4541	> 254 psi (1.75 MPa) (substrate failure)
Thermal Compatibility	ASTM C884	Pass
Shore D Hardness	ASTM D2240	80
Indentation	MIL -PRF -24613	~ 0%
Impact Resistance	ASTM D2794	1.67 ft-lb (2.27 joules) (1/16 in) at 1 mm of thickness
Abrasion Resistance	ASTM D4060	CS-17/1,000 cycles/2.2 lb (1,000 g) -0.0035 oz (-0.10 g) H-22/1,000 cycles/2.2 lb (1,000 g) -0.055 oz (-1.57 g)
Coefficient of Friction	ASTM D1894-61T	Steel 0.3 Rubber 0.5
Water Absorption	ASTM C 413	0.07%
Resistance to Fungi Growth	ASTM G21	Rated 0 (no growth)
Resistance to Mold Growth	ASTM D3273	Rated 10 (highest resistance)
Shelf Life		Components A+B: 1 year in original unopened packaging Component C: 6 months in original unopened packaging. Store dry between 50° - 77°F (10° - 25°C). Protect from freezing.
Chemical Resistance		Please consult Sikafloor Technical Services.

How to Use 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 good bond. Prepare the surface by any appropriate mechanical means, in order to achieve a profile equivalent to ICRI-CSP 3. 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 Sales for a recommendation.

Mixing

Mix Ratio: Components A : B : C = 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 - 75° F (18 - 24° C). Premix Components A and B separately, make sure all pigment is evenly distributed. Empty component A into a clean pail and gradually add component C (powder) pouring slowly over a period of 20 seconds, mix for at least 1 min until all powders are wetted out.

Note: Do not dump powder into resin! Add component B and mix all ingredients continuously and thoroughly for 3 minutes. 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).

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

Application

Smooth coating: apply one to two coats of Sikafloor-31NA PurCem to the substrate using a short or medium nap roller. Push the resin well into the surface, making sure the floor is fully wetted and then pull back lightly with the roller to the required thickness.

Slip-resistance top coat: apply a single coat at 15-20 mils using a short nap roller, lightly broadcast the wet top coat with selected mineral aggregates (selected for texture) and back roll to encapsulate the aggregate.

Slip-resistant broadcast coating: apply a body coat of Sikafloor-31NA PurCem at a thickness of 15-20 mils, immediately broadcast the wet coating to rejection with selected mineral aggregates (selected for texture). Once the broadcast body coat has dried sufficiently to allow foot traffic, sweepup and vacuum the loose unbonded aggregate. Apply a top coat at a thickness of 15-20 mils using a squeegee followed by backrolling to provide a uniform texture and finish.

Maintain a 'wet-edge' to avoid lap marks. Over-rolling and delays in the installation of mixed material may cause inconsistencies with visible lap marks in the finished floor. Beware of accelerated cure rates when applying at elevated substrate and ambient temperatures.

Maintain consistent thickness throughout the entire area. Gloss levels and visual appearance may vary depending on thickness of material applied.



Limitations

Notes on Limitations:

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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.

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 85% (during application and curing)

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. On no account should thinners be added to the mix. Adding thinners will void any applicable Sika warranty.

Application: Avoid puddles during application.

- If steam cleaning is required, do not use Sikafloor-31NA PurCem as a top coat.
- 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 24 hrs.
- Color uniformity cannot be completely guaranteed from batch to batch (numbered). Take care when using Sikafloor PurCem products to draw from inventory in batch number sequence, do not mix batch numbers in a single floor area.
- Some colors may produce noticeable shade variations between Sikafloor PurCem systems (e.g. difference between floor and coving mortars). In order to achieve a uniform appearance, the use of top coats (e.g. Sikafloor-31NA) throughout entire area may be required.
- Will discolor over time when exposed to sunlight (UV) and under certain artificial lighting conditions. UV resistant, light stable topcoats are available where ultimate color/clarity retention is required.
- 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.
- Any aggregate used with Sikafloor systems must be non-reactive and oven-dried.
- This product is not designed for negative side waterproofing.
- For professional use only by experienced applicators.

Caution

COMPONENT A - CAUTION: IRRITANT. Contains Polyester/Polyether Polyol dispersed in water (Mixture). May cause eye/skin/respiratory irritation. May be harmful if swallowed. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

COMPONENT B - WARNING: IRRITANT, SENSITIZER. Contains Polymeric Diphenylmethane Diisocyanate (CAS 9016-87-9). Causes eye/skin/respiratory irritation. Prolonged and/or repeated contact with skin or by inhalation may cause allergic reaction/sensitization. May be harmful if swallowed.

COMPONENT C - WARNING: IRRITANT, SENSITIZER. Contains Silica Quartz (CAS 14808-60-7) and Portland Cement (CAS 65997-15-1). Causes eye irritation. May cause skin/respiratory irritation. Prolonged and/or repeated skin contact may cause an allergic reaction/sensitization. May cause delayed lung damage (silicosis). May be harmful if swallowed. Deliberate misuse by inhalation of vapors may be harmful or fatal. Strictly follow all usage, handling and storage instructions

WARNING: This product contains a chemical known to the State of California to cause cancer.



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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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1-800-933-SIKA NATIONWIDE

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

