



PRODUCT DATA SHEET

Edition 10.2019/v1
CSC Master Format™ 09 62 00
SPECIALTY FLOORING

Sikafloor®-24 NA PurCem®

ADVANCED GENERATION, MEDIUM-DUTY AND SELF-LEVELLING, THIN LAYER
POLYURETHANE/CEMENT SCREED FOR GENERAL INDUSTRIAL AND COMMERCIAL USE

Description	Sikafloor®-24 NA PurCem® is a state-of-the-art, medium-duty, phthalate-free, water-dispersed polyurethane-based/cement and aggregate screed, applicable at thicknesses ranging from 2 to 4 mm (80 to 160 mil). It is designed to be installed as a self-levelling floor topping that provides an easy-to-clean, smooth surface with medium slip resistance values 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.
Where to Use	<ul style="list-style-type: none"> 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. As thin layer, flat but slip-resistant screed in commercial environments, with a suitable UV-stable Sikafloor sealer for retention of aesthetics.
Advantages	<ul style="list-style-type: none"> Can be applied onto 7 to 10 day old concrete after adequate preparation and where substrate has tensile bond strength in excess of 1.5 MPa (218 psi). Easy installation requiring less labour to install than traditional Sikafloor® PurCem® trowel-grade materials. Longer pot life permits increased productivity with less waste. Wide range of application temperatures from 7 °C (45 °F) minimum to 38 °C (100 °F) maximum. Resists a very wide range of organic and inorganic acids, alkalis, amines, salts and solvents. Consult Sika Canada for full details. Refer to the Sikafloor® PurCem® Chemical Resistance Chart. Good abrasion resistance, providing cost effective and durable floor topping. Similar coefficient of thermal expansion to concrete allowing movement with the substrate through normal thermal cycling. Performs and retains its physical characteristics through a wide, wet or dry temperature range from -5 °C (41 °F) at 2 mm and -10 °C (14 °F) at 4 mm up to 120 °C (248 °F). Superior formulation eliminates formation of blisters, such as those arising out of application during elevated temperatures or early and multiple layer applications. Bond strength in excess of the tensile strength of concrete, concrete will fail first. Non-taint, odourless and phthalate-free, avoiding associated toxicity to health and environmental hazards. Behaves plastically under impact; deforms but will not crack or debond. Extra expansion joints are not necessary; simply maintain and extend existing expansion joints up through the Sikafloor® PurCem® Flooring System. Compatible with a wide range of Sikafloor epoxy or polyurethane resin sealers, enabling UV stable sealer to be applied where required. Consult Sika Canada for full details. Easily maintained using commonly employed methods and phenol-free detergents. Achieves highest performance ratings according to ASTM G21 resistance to fungi and ASTM D3273 resistance to mold growth. Potential of contribution towards LEED®v4 credits Meet the requirements of CFIA and USDA for use in food plants.

Technical Data	
Packaging	34.87 kg (20.15 L) unit / 76.87 lb (5.33 US gal.) unit. Consists of 3 Components: A + B + C
Colour	RAL 3009 Oxide Red, RAL 7038 Agate Grey, Sika® Medium Grey (Formerly Telegrey 2), RAL 1001 Beige, RAL 5005 Signal Blue. Special colours (on request) <i>Refer to current price list for availability.</i>
Yield	Primer: Sikafloor®-31 NA PurCem®: 15.3 m ² /unit (165 ft ² /unit) at 10 mil per coat Scratch coat: (where surface/substrate profile requires such) Sikafloor®-24 NA PurCem®: 20 m ² /unit (215 ft ² /unit) at 1 mm (40 mil) per coat Screed: Sikafloor®-24 NA PurCem®: 10 m ² (107 ft ²) per unit at 2 mm (80 mil)
Shelf Life	Note: These figures do not allow for surface porosity, profile or wastage. 12 months in original unopened packaging. Store dry at temperatures between 10 and 25 °C (50 and 77 °F) and protect from freezing. If frozen, discard product. Condition material for at least 24 hours at temperatures between 18 and 24 °C (65 - 75 °F) before use.
Mix Ratio	Components A:B:C = A x 4 : B x 4 : C x 1. Mix full units only.
Application Temperature	7 °C (45 °F) min. / 38 °C (100 °F) max.

Service Temperature	The product is suitable for use when exposed to continuous temperatures, wet or dry, of up to 120 °C (248 °F). The minimum service temperature is -5 °C (41 °F) at 2 mm and -10 °C (14 °F) at 4 mm.	
Cure Time	at 20 °C (68 °F) / 4 mm (160 mil)	
Foot traffic	18 hours	
Light traffic	24 hours	
Normal Traffic (Full cure)	5 days	
Softening Point	130 °C (266 °F)	
Properties at 23 °C (73 °F) and 50 % R.H.		
Density ASTM C905	1.73 kg/L (14.45 lb/US gal.)	
Flow	396 mm (15.6 in)	
Pot Life	20 - 25 minutes	
Compressive Strength	24 hours	37 MPa (5366 psi)
ASTM C579	3 days	43 MPa (6236 psi)
	7 days	46 MPa (6771 psi)
	28 days	48 MPa (6961 psi)
Tensile Strength ASTM C307	8.9 MPa (1290 psi)	
Flexural Strength ASTM C580	18.8 MPa (2726 psi)	
Bond Strength ASTM D4541	4.12 MPa (597 psi) (substrate failure)	
Surface Hardness, Shore D ASTM D2240	83	
Indentation MIL-PRF-24613	~ 0 %	
Abrasion Resistance ASTM D4060		
H-17/1000 cycles/1000 g (2.2 lb)	0.07 g (0.0025 oz)	
H-22/1000 cycles/1000 g (2.2 lb)	0.239 g (0.0084 oz)	
Coefficient of Friction	Steel	0.3
ASTM D1894-61T	Rubber	0.65
Coefficient of Thermal Expansion ASTM D696	5.43 x 10 ⁻⁵ mm/mm/°C (3.02 x 10 ⁻⁵ in/in/°F)	
Shrinkage	0.248 %	
Flexural Modulus ASTM C580	1871 MPa (271 425 psi)	
14 days		
Resistance to Fungi Growth ASTM G21	Rated 0 (no growth)	
Resistance to Mold Growth ASTM D3273	Rated 10 (highest resistance)	
VOC Content	A+B+C = 5 g/L	
Chemical Resistance	Consult Sika Canada	

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

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 - 6. The compressive strength of the concrete substrate should be at least 25 MPa (3625 psi) at 28 days and a minimum of 1.5 MPa (218 psi) in tension 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 Canada for recommendations.

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.

If necessary, protect all free edges with mechanically-attached metal strips. Never featheredge, always turn into an anchor 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 available upon request from Sika Canada Inc.

Mixin

Mix Ratio: Components A:B:C (A x 4 : B x 4 : C x 1). Mix full units only

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

A *Ted Baugh* 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 Components A and B 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 18 °C (65 °F) will result in a decrease in product workability and slower cure rates. Accelerated cure rates and improved flowability on cool substrates can be achieved via the addition of Sikafloor®-15 NA PurCem® Accelerator.

Application

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 three (3) hours, or more frequently whenever conditions change (e.g. ambient temperature rise/fall, relative humidity increase/decrease, etc.)

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.**

Primer:

Mix and apply a primer coat of Sikafloor®-31 NA PurCem at a consumption of approximately 15.3 m²/unit (165 ft²/unit) per coat to achieve a complete 10 mil 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 curing period of at least three (3) hours at 20° C (68 °F) before application of the screed mortar.

Scratch Coat:

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 approximately 20 m² (215 ft²/unit) per unit, achieving a minimum 1 mm (40 mil) 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 1 mm (40 mil) not fill and level the irregularities, additional coats can be applied, observing the necessary intercoat curing times. Allow a curing period of at least three (3) hours at 20 °C (68 °F) before the application of the screed.

Screed:

Mix and pour the Sikafloor®-24 NA PurCem® onto the floor. Spread to the desired thickness, from 2 - 4 mm (80 - 160 mil), at approximate consumptions of 10 m² (107 ft²) per unit at 2 mm (80 mil) to 5 m² (53.5 ft²) per unit at 4 mm (160 mil), using a notched trowel or pin or Cam® gauge rake.

Note: Take care to spread freshly mixed materials across the transition of previous 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 (3) times longer than the applied product thickness. Allow a minimum 18 hours curing period at 20 °C (68 °F) before opening to foot traffic.

Clean Up

Clean all tools and equipment with Sika® Urethane Thinner and Cleaner. Once hardened, product can only be removed mechanically.

Maintenance

Sikafloor® PurCem® floors are easily cleaned using a stiff brushing action and or high-pressure hot water. Degreasing agents and detergents will assist, but **do not use any compounds containing Phenol as the floor colour may be damaged.** Consult the cleaning compound manufacturer's instructions before use.

Limitations

- Sikafloor® PurCem® systems are best installed by skilled and experience applicators. Contact Sika Canada for advice and recommendations.
- Do not apply below 7 °C (45 °F) or above 38 °C (100 °F) / maximum relative humidity 85 %. Applications at temperatures between 7 and 18 °C (45 and 64 °F) will require addition of Sikafloor®-15 NA PurCem® Accelerator. Use at temperatures around 38 °C (100 °F) is likely to result in reduced pot and working lives.
- Do not apply to concrete if measured air or substrate temperature is within 3 °C (5 °F) of surface temperature calculated dew point (substrate temperature can be lower than the ambient temperature). This will reduce the risk of condensation, which can lead to adhesion failure or blushing of the floor finish.
- 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.
- Do not apply to un-reinforced sand cement screeds, asphaltic or bitumen substrate, glazed tile or non-porous brick, tile and magnesite, copper, aluminium, soft wood, or urethane composition, elastomeric membranes or fibre-reinforced polyester (FRP) composites.
- 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.
- Protect substrate during application from condensation from pipes or any overhead leaks.
- Do not apply to vertical or overhead surfaces. For vertical surfaces refer to Sikafloor®-29 NA PurCem®.
- Hot steam cleaning may lead to delamination due to thermal shock. Where thermal shock resistance is required, use an alternate Sikafloor® NA Purcem® material, consult Sika Canada for advice.
- This product is not designed nor intended for negative side waterproofing
- Do not featheredge.
- Do not hand mix Sikafloor® PurCem® materials; mechanically mix only.
- On no account should this product be thinned. Addition of thinners (eg. water or solvent) will retard the cure, reduce the ultimate properties of this product and void any applicable Sika warranty.
- Any aggregate used with Sikafloor® systems, including PurCem®, must be non-reactive and oven-dried.
- Do not apply to cracked or unsound substrates.
- Do not use on exterior, on-grade substrates; for interior use only.
- Do not apply to surfaces where moisture vapour can condense and freeze.
- While Sikafloor®-24 NA PurCem® can be applied directly to correctly prepared concrete, and while the use of a primer or a scratch coat are optional, the use of either is highly recommended by Sika Canada for both technical and aesthetic reasons. Sample application can be undertaken to assess both the performance and the appearance of screed.
- 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 of “waviness”, slab transitions, etc.
- Colour 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 light custom colours 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 may be required.
- Will discolour over time when exposed to UV light and under certain artificial lighting conditions. Use Sikafloor®-33 NA PurCem® as a solid colour, UV resistant top coat. Use of clear, UV resistant top coats may not prevent discolouration of underlying materials.

Health and Safety Information

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.

KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY

The Information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelflife. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.sika.ca

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