



PRODUCT DATA SHEET

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SPECIALTY FLOORING

Sikafloor®-31 NA PurCem®

ADVANCED GENERATION, HIGH-BUILD AND SOLVENT-FREE POLYURETHANE/CEMENT PRIMER, COATING AND TOP COAT

Description	Sikafloor®-31 NA PurCem® is state-of-the-art, high-build coating with a matte finish, based upon phthalate-free, water-dispersed polyurethane/cement and aggregate technology applied at 10 mil per coat. It is designed as a standalone coating for concrete, as primer/sealer for Sikafloor®-24 NA PurCem® and as a top coat for Sikafloor® PurCem® broadcast textured systems. It is an economical and versatile material that improves adhesion and mitigates outgassing of substrates as a primer, while providing excellent chemical resistance properties and very good durability against abrasion and mechanical damage. Sikafloor®-31 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"> Sikafloor®-31 NA PurCem® is primarily used as a chemically resistant high build coating used to protect horizontal and vertical concrete substrates, but is equally effective over Sikafloor®-19 NA PurCem®, Sikafloor®-20 NA PurCem®, Sikafloor®-22 NA PurCem®, Sikafloor®-24 NA PurCem® and Sikafloor®-29 NA PurCem®. Typically used in food processing plants, chemical storage areas, warehouses, washrooms, laboratories, food preparation areas and chemical process plants.
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). Economical and easy installation requiring less labour to install than traditional Sikafloor® PurCem® materials. Versatile material suitable for application as a primer, standalone coating and top coat for other PurCem systems. Longer pot life permits increased productivity with less waste. 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. 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 temperature range from -10 °C (14 °F) up to 90 °C (194 °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. Excellent long term wear resistance from a two-coat application. 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 (special order grade). Potential contribution for LEED® projects. Meets incidental food contact requirements of CFIA and USDA for use in food plants..

Technical Data	
Packaging	5.5 kg (3.82 L) unit / 12.1 lb (1.03 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, Special colours (on request) <i>Note: Refer to current price list for availability.</i>
Yield	Approx. 15.3 m ² /unit (165 ft ² /unit) @ 10 mil per coat <i>Note: These figures do not allow for surface porosity, profile or wastage.</i>
Shelf Life	Components A+B: 1 year in original unopened packaging. Component C: 1 year in original unopened packaging. Store dry between 10 and 25 °C (50 and 77 °F) and protect from freezing. If frozen, discard product. Condition material for at least 24 hours to 18 - 24 °C (65 - 75 °F) before use.
Mix Ratio	Components A:B:C = A x 1 : B x 1 : C x 1. Mix full units only.
Application Temperature	7 °C (45 °F) min. / 38 °C (100 °F) max.
Service Temperature	As a standalone coating, continuous service temperature: -10 to 90 °C (14 to 194 °F). As a top coat onto Sikafloor® PurCem® mortars, please refer to specific mortar Product Data Sheet.
Cure Time	At 20 °C (68 °F)
Foot traffic	24 hours
Light traffic	30 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	1.44 kg/L (11.99 lb/US gal.)	
Pot Life	15 - 20 min	
Tensile Strength ASTM C307	15.38 MPa (2231 psi)	
Flexural Strength ASTM C580	31.8 MPa (4613 psi)	
Bond Strength ASTM D4541	4.55 MPa (660 psi) (substrate failure)	
Surface Hardness, Shore D ASTM D2240	81	
Indentation MIL-PRF-24613	~ 0 %	
Abrasion Resistance ASTM D4060		
H-17/1000 cycles/1000 g (2.2 lb)	0.08 g (0.003 oz)	
H-22/1000 cycles/1000 g (2.2 lb)	0.153 g (0.005 oz)	
Coefficient of Friction	Steel	0.30
ASTM D1894-61T	Rubber	0.75
Shrinkage	0.225 %	
Flexural Modulus ASTM C580	1896 MPa (275 052 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. 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, leveling of irregularities, etc. should be carried out using an appropriate Sika® profiling mortar. Contact Sika Canada for recommendations.

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

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

Pre-agitate Components A and B separately, making sure all solids, including pigments, are uniformly distributed

Empty Component A into a clean pail and gradually add Component C (powder), mix for at least one (1) minute until all powders are wetted out. Mix at low speed (300 - 450 rpm) using a drill fitted with an *Exomixer*®-type mixing paddle (recommended) suited to the size of mixing container to minimize air entrapment. Add Component B and mix all ingredients continuously and thoroughly for three (3) minutes. During the blending operations and observing good safety practices, ie turning off and removing revolving parts, scrape down the sides and bottom of the 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.).

Standalone Coating

Apply two (2) coats of Sikafloor®-31 NA PurCem® at 10 mil w.f.t. per coat to the substrate using a short or medium nap roller. Work 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-resistant Broadcast Coating

Apply a body coat of Sikafloor®-31 NA PurCem® at a thickness of 10 mil w.f.t., immediately broadcast the wet coating to rejection with mineral aggregates (selected for texture). Once the broadcast body coat has dried sufficiently to allow foot traffic, sweep-up and vacuum the loose unbonded aggregate. Apply a top coat at a thickness of 10 mil w.f.t. using a squeegee followed by backrolling to provide a uniform texture and finish.

System Top Coat

Where a broadcast Sikafloor®-19 NA, -20 NA & -22 NA PurCem® system has been installed, and a top coat is required, apply a single coat at 10 mil w.f.t using a short nap roller and back roll to encapsulate the aggregate and seal the surface.

Clean Up	Clean all tools and equipment with Sika® Urethane Thinner and Cleaner. Once hardened, product can only be removed mechanically. Wash soiled hands and skin thoroughly in hot soapy water or use Sika® Hand Cleaner towels.
Maintenance	Sikafloor® PurCem® floors are easily cleaned using a stiff brushing action and/or high-pressure 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	<ul style="list-style-type: none"> ▪ Sikafloor® PurCem® systems are best installed by skilled and experienced applicators. Consult Sika Canada for advice and recommendations. ▪ Do not apply below 7 °C (45 °F) or above 38 °C (100 °F) / maximum relative humidity 85 %. Use at temperatures between 7 - 18 °C (45 - 64 °F) requires 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. ▪ Steam cleaning may lead to delamination due to thermal shock (use over Sikafloor®-19 NA PurCem®, Sikafloor®-20 NA PurCem® or Sikafloor®-22 NA PurCem®). ▪ 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 porous surfaces where significant moisture vapour transmission (out-gassing) will occur during application. ▪ 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. ▪ This product is not designed nor intended for negative side waterproofing. ▪ Do not mix Sikafloor® PurCem® materials by hand; mechanical 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. ▪ Avoid puddling material during application. ▪ 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. ▪ While the product is supplied in colours, it is not intended and should not be used as a uniform decorative finish; some variation in initial surface sheen should be expected. ▪ 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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