BUILDING TRUST

PRODUCT DATA SHEET

Sikafloor®-21 PurCem® LP

MEDIUM TO HEAVY DUTY, SELF-SMOOTHING, POLYURETHANE HYBRID FLOORING SCREED

DESCRIPTION

Sikafloor®-21 PurCem® LP is a three part, water dispersed medium to high strength coloured polyurethane modified, cement and aggregate screed with self smoothing properties.
It has an aesthetic, smooth textured aggregate surface providing medium slip resistance and is typically installed at 3 to 6 mm thickness.

USES

Sikafloor®-21 PurCem® LP may only be used by experienced professionals.

Sikafloor®-21 PurCem® LP is used as a scratch coat primer, basecoat and wear coat layer in Sikafloor®PurCem® system build ups, in areas of medium to heavy loading, high chemical exposure and abrasion, such as in:

- Food processing plants (wet or dry process areas, freezers and coolers)
- Chemical plants
- Laboratories
- Workshops

FEATURES

- Good chemical resistance. Resists a wide range of organic and inorganic acids, alkalis, amines, salts and solvents. Please refer to the Chemical Resistance Chart or consult your local Technical Department
- 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 -5 °C up to +65 °C
- Bond strength in excess of the tensile strength of concrete. Concrete will fail first
- Non tainting / odourless
- VOC free
- High mechanical resistance. Behaves plastically subject to impact. Will deform but will not crack or debond
- High abrasion resistance resulting from its silica aggregate structure
- Can be applied to substrates with high moisture content (7 days old or mature damp concrete)
- Jointless. Extra expansion joints are not necessary; simply maintain and extend existing expansion joints up through the Sikafloor® -PurCem® flooring system
- Easily maintained

CERTIFICATES AND TEST REPORTS

- Conforms to the requirements of EN 13813: 2002 as CT - C50 - F10 - AR0.5.
- Certified as suitable for use in food and beverage facilities that operate in accordance with a HACCP based food safety programme, dated 23 October 2023.
- Thermal Compatibility between Concrete and An Epoxy-Resin Overlay in accordance with ASTM C884 / C884M-16, Report No. MIS 017/21/R 0129(A), April 2021.
- Absorption of Chemical-Resistant Mortars, Grouts and Monolithic Surfacings in accordance with ASTM C413-18, March 2021.
- Wear Resistance - BCA in accordance with BS EN 13892-4:2002, March 2021.
- All other values indicated are internal test results.

PRODUCT INFORMATION

Composition	Part A : Water borne polyol Part B : Isocyanate Part C : Aggregates, cement and active fillers		
Packaging	Part A : 3.00 kg plastic drum Part B : 3.00 kg plastic jerrycan Part C : 14.00 kg plastic lined, double paper bags Part A+B+C: 20.00 kg ready to mix units		
Appearance and colour	Part A : Liquid / coloured Part B : Liquid / dark brown Part C : Powder / natural grey Available colours : Green, Grey, Light Grey, Cream, Red.		
Shelf life	Part A: Part B: Part C:	12 months from date of production. Must be protected from frost. 9 months from date of production. Must be protected from frost. 6 months from date of production. Must be protected from humidity.	
Storage conditions	If stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +18 °C and +30 °C.		
Density	Part A Part B Part C Part A+B+C mixed	~1.07 kg/L ~1.23 kg/L ~1.80 kg/L ~1.93 ± 0.03 kg/L	(EN ISO 2811-1) & (ASTM C 905) (at +20 °C to +30 °C)

TECHNICAL INFORMATION

Shore D Hardness	~80		(ASTM D 2240)
Compressive strength	28 days 28 days	~ 44 N/mm² ~ 50 N/mm²	(ASTM C 579) (BS EN 13892-2) (at +23°C/50%r.h)
Flexural-strength	28 days 28 days	~ 14.7 N/mm² ~ 10 N/mm²	(ASTM C 580) (BS EN 13892-2) (at +23°C/50%r.h.)
Tensile strength	28 days	~ 6.5 N/mm²	(ASTM C 307) (at +23°C/50%r.h.)
Tensile adhesion strength	~ 1.75 N/mm²	(failure in concrete)	(EN 1542)
	(1.5 N/mm² is the minimum pull off strength of the recommended concrete substrate)		
Reaction to fire	Sikafloor®-21 PurCem®	Class $B_{(fl)}$ S1	(BS EN 13501-1)
Chemical resistance	Resistant to many chemicals. Please ask for a detailed chemical resistance chart.		

Skid / slip resistance (DIN 51130)

Substrate	Class
Sikafloor®-21 PurCem®	R 9

Service temperature

System Thickness	Minimum	Maximum
3 mm	+5 °C	+60 °C
5 mm	-5 °C	+65 °C

The product is not designed to withstand thermal shock. Hot steam cleaning is not recommended. Use Sikafloor®-20 PurCem® LP 9 mm.
Sikafloor®-21 PurCem® LP can be subject to thermal shock < 70 °C at 6

mm.

SYSTEM INFORMATION

Systems

Sikafloor®-21 PurCem® LP system

Layer	Product
Scratch Coat	Sikafloor®-21 PurCem® LP
Body Coat	Sikafloor®-21 PurCem® LP

*As optional primers Sikafloor®-161 HC + Quartzsand 0.4 – 0.8 mm broadcast to excess might be used. Please refer to the individual Product Data Sheet.

Seal Coat (Optional)

1 x Sikafloor®-31 PurCem® LP

Note: These system configurations must be fully complied with as described and may not be changed.

APPLICATION INFORMATION

Mixing ratio

Part A : B : C = 1 : 1 : 4.67 (packaging size = 3 : 3 : 14) by weight

Consumption

Layer	Product	Consumption
Scratch Coat	Sikafloor®-21 PurCem® LP	~1.5 kg/m²
Body Coat	Sikafloor®-21 PurCem® LP	~4.5 - 5.0 kg/m² for 3 mm ~8.5 – 9.0 kg/m² for 5 mm

This figure is theoretical and does not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc.

Layer thickness

3 mm min. / 6 mm max

Material temperature

+10 °C min. / +30 °C max.

Ambient air temperature

+10 °C min. / +35 °C max.

Relative air humidity

85 % max.

Dew point

Beware of condensation!
The substrate and uncured floor must be at least 3 °C above dew point to reduce the risk of condensation or blooming on the floor finish.

Substrate temperature

+10 °C min. / +30 °C max.

Substrate moisture content

The substrate can be dry or damp (saturated surface dry or SSD) with higher moisture content (No ponding water). Check rising moisture.
The substrate needs to be visibly dry and have adequate pull-off strength min. 1.5 N/mm².

Pot Life

Temperature	Time
+10 °C	~35 - 40 min
+20 °C	~22 - 25 min
+30 °C	~15 - 18 min
+35 °C	~12 - 15 min

Curing time

Temperature	Foot Traffic	Light Traffic	Full Cure
+10 °C	~24 h	~48 h	~7 d
+20 °C	~18 h	~24 h	~4 d
+30 °C	~12 h	~18 h	~3 - 4 d
+35 °C	~12 h	~18 h	~3 - 4 d

Notes: Times are approximate and will be affected be changing ambient and substrate conditions, particularly temperature and relative humidity.
If used other primers than Scratch Coat refer the Technical Data Sheet of the respective product. Make sure that the primer and the scratch coat layer is fully cured before application of Sikafloor® PurCem® previous layer.

BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

IMPORTANT CONSIDERATIONS

- Construction joints require pre-treatment with a stripe coat to verify and seal loss of material through the joint.
- It is advisable to perform a groove along the perimeter of the application area particularly if there are columns or gullies in the floor surface, as indicated in the application details of the System Data Sheet, to prevent curling during curing. Large areas do not require perimeter groove. Width and depth must be twice the thickness of the floor finish.
- If an added aggregate screed layer is applied, retaining grooves must also be created for this screed.
- In cases where thermal stress is expected the formation of retaining grooves is a must also on the layer of standard mix of Sikafloor®-21 PurCem® LP.
- Do not apply to PCC (polymer modified cement mortars) that may expand due to moisture when sealed with an impervious resin.
- Always ensure good ventilation when using Sikafloor®-21 PurCem® LP in a confined space, to prevent excessive ambient humidity.
- Freshly applied Sikafloor®-21 PurCem® LP must be protected from damp, condensation and direct water contact (rain) for at least 24 hours.
- Protect the substrate during application from condensation from pipes or any overhead leaks.
- Do not apply to cracked or unsound substrates.
- Do not apply to porous surfaces where significant moisture vapour transmission (outgassing) will occur during application.
- For consistent results it is advised to always use the scratch coat prior to placing Sikafloor®-21 PurCem® LP on any substrate.
- Always allow a minimum of 48 hours after product application prior to placing into service in proximity with food stuffs.
- Products of the Sikafloor®-21 PurCem® LP product range are subject to discolouration when exposed to UV radiation. Extent depends on colour. There are no measurable losses of any properties when this occurs and it is a purely aesthetical matter.
- Products can be used outside provided the change in appearance is acceptable for the customer.
- In some slow curing conditions, soiling of the surface may occur when opened to foot traffic, even though mechanical properties have been achieved. It is advised to remove dirt using a dry mop or cloth. Avoid scrubbing with water for the first three days.
- Hot steam cleaning may lead to delamination due to thermal shock.
- Do not apply to water soaked, glistening wet concrete substrates.
- Do not apply below +10 °C or above +35 °C or a maximum relative humidity 80 %.
- Sika® Thinner C is flammable. NO NAKED FLAMES.
- Do not apply to un-reinforced sand cement screeds, asphaltic or bituminous substrate, glazed tile or non-porous brick, tile and magnesite, copper, aluminium, soft wood or urethane composition, elastomeric membrane and fibre reinforced polyester (FRP) composites. Do not apply to wet or green concrete or polymer modified patches if the moisture content is above 10 %.
- Do not mix Sikafloor®-PurCem® LP products by hand. Use only mechanical means.
- Colour uniformity can not be completely guaranteed from batch to batch (numbered).
- Take care when using Sikafloor®-PurCem® LP products to draw from inventory in batch number sequence. Do not mix batch numbers in a single floor area.
- Proceed with placement of the material to facilitate the release of entrapped air from the mix and CO_2 from the reaction. Do so in every batch mixed in a consistent manner in order to avoid colour differences due to increased temperatures in the reaction.
- Products of the Sikafloor® -PurCem® product range are subject to yellowing when exposed to UV radiation. There are no measurable losses of other properties when this occurs and it is a purely aesthetical matter. Products can be used outside provided the change in appearance is acceptable by the customer.
- Sikafloor®-21 PurCem® LP is not recommended for shock freezers (in spite of suitability for -40 °C service temperature).

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

EQUIPMENT

MIXING EQUIPMENT
- Electric single paddle mixer (300 to 400 rpm)
- Electric double paddle mixer (>700 W, 300 to 400 rpm)

APPLICATION EQUIPMENT
- Flat, round edge steel trowel
- Spiked roller
- Trowels, including serrated
- Pin leveller (optional)

SUBSTRATE QUALITY

TREATMENT OF JOINTS AND CRACKS
IMPORTANT
Incorrect treatment of cracks
- The incorrect assessment and treatment of cracks may lead to a reduced service life and reflective cracking.
- Construction joints and existing static surface cracks in substrate require pre-treating before full layer application. Use Sikadur® or Sikafloor® resins.

The System can be applied on green or damp concrete with no standing water. Allow for at least 3 days for early concrete shrinkage to occur to prevent shrinkage cracks from appearing on the wearing surface.

Cementitious substrates (concrete / screed) must be structurally sound and of sufficient compressive strength (minimum 25 N/mm²) with a minimum tensile strength of 1.5 N/mm².
Substrates must be clean, dry and free of all contaminants such as dirt, oil, grease, coatings, laitance, surface treatments and loose friable material.
Substrate priming is normally not 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, de-bonding pinholes and other aesthetic variations.
Sikafloor® PurCem® can be applied onto recent concrete over 7 to 10 days old or onto old damp concrete (SSD) without having to prime first, as long as the substrate fulfils the above requirements.

SUBSTRATE PREPARATION

- Concrete substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and achieve an open textured surface to achieve CSP 3-6 according to the International Concrete Repair Institute.
- Weak concrete must be removed and surface defects such as blow holes and voids must be fully exposed.
- Repairs to the substrate, filling of blowholes/voids and surface levelling must be carried out using appropriate products from the Sikafloor®, SikaDur® and Sikagard® range of materials.
- High spots can be removed by grinding.
- All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum.
- To prevent curling of the applied product during curing, place retaining grooves in the substrate along all exposed edges (perimeter, joints, working day joints, connections, plinths, columns, covings and drains / gullies). Width and depth of grooves must be twice the thickness of the floor finish.
- *Edge terminations.* All free edges and working day joints of Sikafloor®-21 / -20 PurCem® LP, 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 must have a depth and width of twice the thickness of the Sikafloor®-PurCem®. Refer to the edge details provided in the Method Statement. If necessary, protect all free edges with mechanically attached metal strips. Never featheredge, always turn into an anchor groove.
- *Expansion joints* must 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 vessels sealing rings.

MIXING

IMPORTANT
Mix full units only
3 PART MIXING PROCEDURE
1. Material and ambient temperature will affect the mixing process. If necessary, condition the materials for best use to +18 °C to +27 °C.
2. Mix Part A (resin) until the coloured pigment is dispersed and a uniform colour is achieved.
3. Premix Part B (hardener) separately then add Part B (hardener) to Part A.
4. Mix Part A + B continuously for 30 seconds until a uniformly coloured mix is achieved.
5. After mixing for 30 seconds, gradually add Part C over a period of 15 seconds while you continue mixing.
6. After combining all parts, mix for an additional 90 seconds, until a uniform mix is achieved. Note: At ambient temperatures less than +15 °C mix between 30 seconds and 1 minute longer. Use a low speed electric stirrer (300 - 400 rpm) for mixing parts A+B+C.
7. To ensure thorough mixing, pour materials into another container and mix again to achieve a smooth and uniform mix.
8. During the final mixing stage, scrape down the sides and bottom of the mixing container with a flat or straight edge trowel at least once to ensure complete mixing.

When adding aggregate to prepare a patching / levelling mortar, gradually add the 6 kg of 2 - 3 mm dry quartz sand immediately after mixing the full set. For preparation of the mortar mix use a pan type revolving mixer.

APPLICATION

IMPORTANT
Prior to application
Confirm substrate moisture content, r.h. and dew point meet the requirement.
Protecting the material after application
After application, protect the System from damp, condensation and direct water contact for at least 24 hours.
Protect from overhead leaks and condensation
Protect the Product during application from pipe condensation or any overhead leaks.
Ventilation in confined spaces
Always ensure good ventilation when applying the Product in a confined space.
Application on polymer modified cement mortars
Do not apply the product on polymer modified cement

mortars if the mortar expands when sealed with an impervious resin.

Waiting time for foodstuff

Allow a minimum of 48 hours after application before placing foodstuff in the same area.

SCRATCH COAT

1. Pour the mixed Product onto the prepared substrate.
2. Scrape the Product into the prepared surface with a steel trowel to the required thickness so that the surface texture is filled.

WEARING LAYER

1. Pour the mixed Product onto the substrate. Note: The consumption is specified in Application Information.
2. Apply the Product evenly over the surface with a pin leveller or a trowel. Straight edge trowel can also be used to smooth out the marks of the tooth trowel or instead of it. Take care to spread newly placed materials across the transition of previously applied mixes before the surface begins to set.
3. Back roll the surface in two directions at right angles with a spike roller (less than two minutes after placing). Note: Maintain a "wet edge" during application to achieve a seamless finish. Roller spikes must be at least three times longer than the product thickness applied.
4. Ensure overlap between mixed material is below 10 minutes at +30 °C. Please conduct field test to ensure the overlap time.

Allow a minimum 18 hours cure period at +30 °C before light traffic.

CLEANING OF EQUIPMENT

Clean all tools and application equipment with Thinner C immediately after use.
Hardened / cured material can only be mechanically removed.

MAINTENANCE INSTRUCTIONS

CLEANING

To maintain the appearance of the floor after application, Sikafloor®-21 PurCem® LP must have all spillages removed immediately and must be regularly cleaned using rotary brushes, mechanical scrubbers, scrubber dryers, high pressure washers, wash and vacuum techniques, etc., using suitable detergents and waxes.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

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 in accordance with Sika's recommendations. 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 written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. 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.

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