

## PRODUCT DATA SHEET

# Sikafloor®-21 PurCem®

Medium to heavy duty, self-smoothing, polyurethane hybrid flooring screed

### DESCRIPTION

Sikafloor®-21 PurCem® is a multi-component, water-based coloured polyurethane hybrid screed with self-smoothing properties. It has a smooth, matt, impervious, hard wearing surface and is typically installed at 3–6 mm thickness.

### USES

Sikafloor®-21 PurCem® 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.

### CHARACTERISTICS / ADVANTAGES

- Good chemical resistance
- High mechanical resistance
- High glass transition point
- Non tainting / odourless
- VOC free
- Can be applied to substrates with high moisture content (7 days old or mature damp concrete - or 10% pbw)

### SUSTAINABILITY

- Conformity with LEED v4 MRc 2 (Option 1): Building Product Disclosure and Optimization – Environmental Product Declarations
- Conformity with LEED v4 MRc 4 (Option 2): Building Product Disclosure and Optimization - Material Ingredients
- Conformity with LEED v2009 IEQc 4.2: Low-Emitting Materials - Paints and Coatings
- Complies AgBB for use in indoor environment. Test report No. G10004B.

### APPROVALS / CERTIFICATES

- Synthetic resin screed material according to EN 13813: 2002, DoP 02 08 02 02 001 0 000002 1088, certified by Factory Production Control Body, 0086, certificate 541325, and provided with the CE-marking
- Coating for surface protection of concrete according to EN 1504-2:2004, Declaration of Performance 02 08 02 02 001 0 000002 1088, certified by Factory Production Control Body, 0086, certificate 541325, and provided with the CE-marking
- EN1186, EN 13130, and prCEN/TS 14234 standards, and the Decree on Consumer Goods, representing the conversion of directives 89/109/EEC, 90/128/EEC and 2002/72/EC for contact with food stuffs, according to test report by ISEGA, 32758 U11 and 32759 U11, both dated December 6th, 2011. (Tests performed on Sikafloor® -20/21/22/29 and 31 PurCem® in standard and LP versions).
- British Standards Specifications (BSS) acceptance for use in the UK.
- Campden and Chorleywood Food Research Association, Ref. S/REP/125424/1a and 2a, dated 8th February, 2012
- Fire classification report according to EN 13501-1 from Exova Warrington Fire for Sikafloor®-21 PurCem® No.317047, dated 24th of March, 2012
- Liquid water transmission rate test report from the Technology Centre, Ref. 15456 dated January 25th, 2012
- Abrasion resistance tests performed by Face Consultants Ltd., according to BS 8204-2:2003, report ref. FC/12/3850, dated January 17th, 2012. (Tests performed on Sikafloor® -20/21 PurCem®)
- Impact resistance values tested at PRA, Ref. n° 75221-151, dated January 11th, 2012
- Slip resistance properties according to DIN 51130 tested at MPI (Materialprüfung und Entwicklung), test reports refs. N° 12-6639-S/12 and 12-6641-S/12, dated August 7th, 2012.
- Thermal expansion coefficient and freeze-thaw cycle resistance performed at RWTH / IBAC, report n° M-

## PRODUCT INFORMATION

<b>Composition</b>	Water-based polyurethane cement hybrid	
<b>Packaging</b>	Sikafloor PurCem 21: 20kg Kit (A+B+C+Pigment)	
	Part A	2.8 kg plastic pail
	Pigment	0.4kg plastic pail
	Part B	3.00 kg plastic jerrycan
	Part C	13.8 kg plastic lined, double paper bags
	Sikafloor PurCem 21: 80kg Mix: (A+B+C+Pigment) Made To Order: Non Stock item	
	Part A	11.2 kg plastic Bucket (1 x unit)
	Pigment	0.4kg plastic pail ( 4 x Units)
	Part B	20 ltr Pails (10lts required for kit-Split drum in Half)
	Part C	13.8 kg plastic lined, double paper bags ( 4 x units required)
<b>Shelf life</b>	Part A	9 months from date of production. <b>Protect from freezing.</b>
	Part B	6 months from date of production. <b>Protect from freezing.</b>
	Part C	6 months from date of production. <b>Must be protected from humidity.</b>
	Pigment	9 months from date of production. <b>Protect from freezing.</b>
	<b>Storage conditions</b>	Original, unopened and undamaged sealed packaging, in dry conditions at temperature between +5 C° and +30 °C.
<b>Appearance and colour</b>	Part A	coloured liquid after tinting
	Part A (neutral)	light beige liquid
	Part B	brown liquid
	Part C	natural grey powder
	Pigment	colourpack - various colours
	Standard RAL colours: Dusty Grey - Traffic Grey - Curtain Call - Beige - Grass Green - Maize Yellow- Oxide Red - Sky Blue	
<b>Density</b>	Part A (pre-tinted)+B+C mixed: ~ 1.93 kg/l ± 0.03 (at +20 °C)	
	Part A (neutral)+B+C+D mixed: ~ 1.93 kg/l ± 0.03 (at +20 °C)	

## TECHNICAL INFORMATION

<b>Shore D Hardness</b>	~80–85	(ASTM D 2240)
<b>Compressive strength</b>	~50 N/mm <sup>2</sup> (28 days at +23 °C / 50 % r.h.)	(BS EN 13892-2)
<b>Tensile strength in flexure</b>	~10 N/mm <sup>2</sup> (28 days at +23 °C / 50 % r.h.)	(BS EN 13892-2)
<b>Tensile adhesion strength</b>	concrete failure	(EN 1542)

## SYSTEM INFORMATION

<b>Systems</b>	Sikafloor PurCem HB-22 (Broadcast Standard) Sikafloor PurCem HB-22 UV (Broadcast UV Top Coat) Sikafloor PurCem HS-21 (Smooth Finished)
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## APPLICATION INFORMATION

<b>Mixing ratio</b>	<b>Mix full units only.</b>		
<b>Consumption</b>	~ 1.93 kg/m <sup>2</sup> /mm		
<b>Layer thickness</b>	Scratch coat: 1–2 mm Base- and wear coat: 3–6 mm		
<b>Ambient air temperature</b>	+10 °C min. / +40 °C max.		
<b>Relative air humidity</b>	85 % max.		
<b>Dew point</b>	Beware of condensation! The substrate and uncured floor must be at least 3 °C above dew point to reduce the risk of condensation or other disturbance of the surface on the floor finish.		
<b>Substrate temperature</b>	+10 °C min. / +40 °C		
<b>Substrate moisture content</b>	Can be installed on substrates 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/mm <sup>2</sup> .		
<b>Pot Life</b>	<b>Temperatures</b>	<b>Time</b>	
	+10 °C	~ 35 - 40 minutes	
	+20 °C	~ 22 - 25 minutes	
	+30 °C	~ 15 - 18 minutes	
	+35 °C	~ 12 - 15 minutes	
<b>Waiting time to overcoating</b>	Before overcoating Sikafloor®-21 PurCem® allow:		
	<b>Substrate temperature</b>	<b>Minimum</b>	<b>Maximum</b>
	+10 °C	24 hours	72 hours
	+20 °C	24 hours	48 hours
	+30 °C	12 hours	24 hours
	+35 °C	12 hours	24 hours
	Times are approximate and will be affected by 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. Sikafloor PurCem Accelerator dosage for faster turn around and colder temperature applications; Sikafloor®-21 PurCem® Addition rate to approx halve the above waiting times - 15 mls. Addition at approx 6 degrees C. It is not recommended to exceed - 25-30 mls of PurCem Accelerator per kit.		

## BASIS OF PRODUCT DATA

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

## FURTHER INFORMATION

Please refer to:

- Sikafloor® PurCem® Method Statement
- Sika® Method Statement Mixing and Application of Flooring Systems
- Sika® Method Statement Surface Evaluation & Preparation
- Sikafloor® PurCem® System Data Sheets

## IMPORTANT CONSIDERATIONS

- Do not apply to PCC (polymer modified cement mortars) that may expand due to moisture when sealed with an impervious resin.
- Substrate outgassing: to minimize substrate outgassing Sikafloor®-21 PurCem® should be installed during declining temperatures. If outgassing persists a scratch coat of Sikafloor®-21 PurCem® or Sikafloor PurCem 24 should be applied to completely seal the surface and reduce surface defects caused by rising temperatures or overly porous substrates: All concrete behaves differently, as such a trial application is recommended to determine if a scratch coat is required for broadcast systems. For Smooth applications a scratch coat is always advised.
- Always ensure good ventilation when using Sikafloor®-21 PurCem® in a confined space, to prevent excessive ambient humidity.
- Freshly applied Sikafloor®-21 PurCem® must be pro-

tected 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.
- Always allow a minimum of 48 hours after product application prior to placing into service in proximity with food stuffs.
- Products of the Sikafloor® PurCem® 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 aesthetic 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.

## ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY / PRE-TREATMENT

The surface must be clean, dry and free of all contaminants such as dirt, oil, grease, coatings and surface treatments, etc. All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by vacuum. Pull of strength shall not be less than 1.5 N/mm<sup>2</sup>. If in doubt apply a test area first.

### MIXING

Premix part A with a low speed electric stirrer and then add part B and mix for 30 seconds. For the colourpack version, premix part A neutral with a low speed electric stirrer and add part D to it. Mix until a uniform colour is achieved. Add part B and mix for 30 seconds.

Use a double paddle (axis) mixer and gradually add part C (aggregate) to the mixed resin. Allow part C to blend for further 2 minutes minimum, (if required add PurCem accelerator and mix for a further 1 minute, to ensure complete mixing and a uniform moist mix is obtained. During the operations, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once (parts A+B+C) to ensure complete mixing.

#### Mixing Tools

Use a low speed electric stirrer (300 - 400 rpm) for mixing parts A and B. For preparation of the mortar mix use a double paddle mixer.

## APPLICATION

**Broadcast Applications:** For best results and long-term performance Sikafloor 21 Base coat should be applied with the addition of PurCem pigment, however can be installed without pigment if the client and applicator have no objection to the potential of visible colour difference with deep scratches or damage to the surface, no noticeable difference in application is evident when used without the addition of pigment.

**Smooth Applications:** Scratch Coat priming is required: Sikafloor 21 PurCem must be installed with the addition of Sikafloor PurCem Pigment for smooth applications

Apply Sika floor 21 PurCem Evenly at the prescribed thickness without any ridges when joining previous mixes by spreading the new mix and introducing it into the edges of the previous. Spike roll the product to release any air entrained by mixing and to assist in a final even out of the surface.

Time the application of the broadcast aggregate whilst the base can still receive it. This is generally between 2-5 minutes post installation of the base. - Depending on ambient and substrate temps.

Take care to remove as much of the broadcast aggregate as possible before overcoating. Excess loose aggregate on the floor when applying finish coats will result in uneven texture and colour shading across the finished floor.

Application of the Sikafloor 31 or 33 PurCem finish coats must be carried out using the correct rolling equipment (See Equipment above).

Product must be applied evenly, and wet edges joined promptly. Squeegee application of the coating then "laying off" with the roller is a recommended way of achieving an even result. Cross "laying off" assists this further.

Failure to adhere to these methods will likely produce uneven textures and colour in the finished product.

### CLEANING OF EQUIPMENT

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

## LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

## 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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**Product Data Sheet**

Sikafloor®-21 PurCem®

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