

## PRODUCT DATA SHEET

# Sikafloor®-20 PurCem® LP

HEAVY DUTY, HIGH STRENGTH, EASY TROWEL, POLYURETHANE-HYBRID FLOORING SCREED

### DESCRIPTION

Sikafloor®-20 PurCem® LP is a three part, water dispersed, high strength, smooth trowel grade, coloured polyurethane modified, cement and aggregate screed suitable for floors subject to heavy loading, abrasion and chemical exposure.

It has a textured aggregate surface providing medium to heavy profile slip resistance and is typically installed at 6 to 9 mm thick.

### USES

Sikafloor®-20 PurCem® LP may only be used by experienced professionals.

Sikafloor®-20 PurCem® LP is used as a final flooring wear layer in areas of heavy loading, high mechanical abrasion and impacts, aggressive chemical attack, thermal shocks and high temperature stresses, such as in :

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

### CHARACTERISTICS / ADVANTAGES

- Fluid consistency requires less labour to install than conventional heavy duty modified PU trowel grade screeds
- Excellent 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 Technical Department

### PRODUCT INFORMATION

#### Composition

Part A : Water borne polyol  
Part B : Isocyanate

- 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 -40 °C (-40 °F) up to +120 °C (248 °F)
- Steam cleanable at 9 mm thick
- Non tainting / odourless
- VOC free
- High mechanical resistance. Behaves plastically subject to impact. Will deform but will not crack or de-bond
- Slip resistance, natural textured surface provides anti-slip traction
- High abrasion resistance resulting from its silica aggregate structure
- Rapid one step application. Normally, no concrete primer or sealer required
- 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

### APPROVALS / CERTIFICATES

Conforms to the requirements of EN 13813: 2002 as CT - C50 - F10 - AR0.5

Conforms to the requirements of EN 1504-2 for principles 5 (PR) and 6 (CR) as a Coating (C)

All other values indicated are internal test results.

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020814020020000017

Part C : Aggregates, cement and active fillers

<b>Packaging</b>	Part A : 3 kg plastic drum Part B : 3 kg plastic jerrycan Part C : 25 kg plastic lined, double paper bags Part A+B+C: 31.0 kg ready to mix units		
<b>Appearance / Colour</b>	Part A : Liquid / coloured Part B : Liquid / brown Part C : Powder / natural grey Available colours (all are approximate): Cream, Green, Grey, Light Grey.		
<b>Shelf life</b>	Parts A and B :	12 months from date of production. Must be protected from frost.	
	Part C :	6 months from date of production. Must be protected from humidity.	
<b>Storage conditions</b>	If stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +18 °C and +30 °C.		
<b>Density</b>	Part A :	~1.07 kg/L	(EN ISO 2811-1) &
	Part B :	~1.24 kg/L	(ASTM C 905)
	Part C :	~1.58 kg/L	at +20 °C
	Part A+B+C mixed :	~2.08 ± 0.03 kg/L	

## TECHNICAL INFORMATION

<b>Shore D Hardness</b>	~80 - 85	(ASTM D 2240)	
<b>Compressive Strength</b>	28 days	~45 N/mm <sup>2</sup>	(ASTM C 579)
	28 days	~50 N/mm <sup>2</sup>	(BS EN 13892-2) at +23 °C / 50 % r.h.
<b>Tensile Strength in Flexure</b>	28 days	~9.5 N/mm <sup>2</sup> (3 mm)	(ASTM C 580)
	28 days	~10.0 N/mm <sup>2</sup>	(BS EN 13892-2) at +23 °C / 50 % r.h.
<b>Tensile Strength</b>	28 days	~4.3 N/mm <sup>2</sup>	(ASTM C 307) at +23 °C / 50 % r.h.
<b>Tensile Adhesion Strength</b>	~1.75 N/mm <sup>2</sup>	(failure in concrete)	(EN 1542)
	(1.5 N/mm <sup>2</sup> is the minimum pull off strength of the recommended concrete substrate)		
<b>Reaction to Fire</b>	Class B <sub>(fl)</sub> S1	(BS EN 13501-1)	
<b>Permeability to Water Vapour</b>	To Water Vapour : (6.1 mm)	0.148 g/h/m <sup>2</sup>	(ASTM E-96)
<b>Temperature Resistance</b>	The product is designed to withstand thermal shock caused by steam cleaning when thickness is 9 mm.		
<b>Skid / Slip Resistance</b>	<b>Substrate</b>	<b>SRV Dry</b>	<b>SRV Wet</b>
	Sikafloor®-20 Pur- Cem® LP	70	65
	TRRL Pendulum, Rapra 4S Slider		

# SYSTEMS

## Systems

Sikafloor®-20 PurCem® LP system

### Layer

Scratch Coat

Body Coat

### Product

Sikafloor®-21 PurCem® LP

Sikafloor®-20 PurCem® LP

\*As optional primers Sikafloor®-161 HC + quartz sand 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 : 8.3 (packaging size = 3 : 3 : 25) by weight

### Ambient Air Temperature

10 °C min. / +30 °C max.

### Consumption

Layer	Product	Consumption
Scratch Coat	Sikafloor®-21 PurCem® LP	~1.5 kg/m <sup>2</sup>
Body Coat	Sikafloor®-20 PurCem® LP	~2.0 kg/m <sup>2</sup> /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

6 mm min. / 9 mm max.

### Relative Air Humidity

80 % 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 minimal 1.5 N/mm<sup>2</sup>.

### 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	~24 h	~24 h	~5 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 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.

# APPLICATION INSTRUCTIONS

## SUBSTRATE QUALITY / PRE-TREATMENT

The concrete substrate must be sound and of sufficient compressive strength (minimum 25 N/mm<sup>2</sup>) with a minimum pull off strength of 1.5 N/mm<sup>2</sup>.

The substrate must be clean dry, or saturated surface dry (SSD) and free of all contaminants such as oil, grease, coatings and surface treatments, etc.

If in doubt, apply a test area first.

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, debonding 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.

### Edge terminations.

All free edges and working day joints of Sikafloor®- 20 / 21 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® LP 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.

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

Material and ambient temperature will affect the mixing process.

If necessary, condition the materials for best use to 18 °C – 27 °C.

Premix part A and B separately, make sure all pigment is uniformly distributed with a low speed electric stirrer.

Start mixer and add parts A and then B and blend for 30 seconds.

Gradually add part C (aggregate) to the mixed resin parts over a period of 15 seconds. DON'T DUMP!

Allow part C to blend for further 2 minutes minimum, 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. Mix full units only.

When adding aggregate to prepare a patching mortar, gradually add the 9 kg of 2 – 3 mm dry quartz sand after mixing the full set.

Use a low speed electric stirrer (300-400 rpm) for mixing parts A and B.

For preparation of the mortar mix use a pan type revolving mixer.

## APPLICATION

Prior to application, confirm substrate moisture content, r.h. and dew point.

Proceed with placement of the material to facilitate the release of entrapped air from the mix and CO<sub>2</sub> 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 Pour the mixed Sikafloor®-20 PurCem® LP onto the substrate and spread evenly with a rake or screed box to the required thickness. Take care to spread newly mixed materials across the transition of previously applied mixes (wet edge), before the surface begins to set.

Finish the surface using a flat, round edge steel trowel. A short pile roller can be used once or twice, and always in the same direction, to provide a more homogeneous finish to the surface. No excessive back-rolling!

Excessive backrolling or trowelling will bring up more resin to the surface, reducing the desired anti-lip surface texture which characterises this product.

As a second texture option, selected mineral aggregates can be broadcast on the wet surface and sealed with a top coat of 1 x Sikafloor®-31 PurCem® LP to lock in the aggregate. In this last case, allow a minimum of 36 hours cure period at 20 °C before light traffic.

### Flow check

Top internal dia.	70 mm	(ASTM C 230-90 / EN 1015-3)
Bottom internal dia.	100 mm	
Height	60 mm	
Flow	210 ± 10 mm	

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## CLEANING OF EQUIPMENT

Clean all tools and application equipment with Thinner C immediately after use.

Hardened / cured material can only be mechanically removed.

## MAINTENANCE

### CLEANING

To maintain the appearance of the floor after application, Sikafloor® -20 PurCem® 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.

### LIMITATIONS

- A retaining groove must be placed at exposed edges along of the application area (perimeter, joints, connections, plinths, columns, covings and drains / gullies) as indicated in the application details of the Method Statement for Application, to prevent curling during curing. 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.
- 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®-20 PurCem® LP in a confined space, to prevent excessive ambient humidity.
- Freshly applied Sikafloor®-20 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 water soaked, glistening wet concrete substrates.
- 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. Extend 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 by 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.
- Do not apply to porous surfaces where significant moisture vapour transmission (out-gassing) will occur during application.
- Improved slip resistance can be obtained by broadcasting the surface with aggregate of suitable granulometry and back rolling with a short pile roller (1 - 2 passes only).
- For the highest hygienic demands, a subsequent top coat of Sikafloor®-31 PurCem® LP may be required. This must be applied within 48 hours after the initial Sikafloor®-20 PurCem® LP application.
- Applications of less than the recommended 6 mm can result in unacceptably rough surfaces, particularly in food industries.
- Sika® Thinner C is flammable. NO NAKED FLAMES.

## 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.

## 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 the exact product data and uses.

## 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.

## 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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