

Sikafloor®-25 PurCem® ECF

Medium to heavy duty, electrostatic conductive, self-smoothing, polyurethane hybrid screed.

Construction

Product Description

Sikafloor®-25 PurCem® ECF is an electrostatically conductive floor screed based on polyurethane cement technology. Sikafloor®-25 PurCem® ECF is especially designed to withstand chemical attack and high impact load and can be used in both wet and dry processing plants. As part of the Sikafloor® PurCem® flooring range Sikafloor®-25 PurCem® ECF provides a highly durable polyurethane cement body coat with an easy to clean smooth-textured surface.

Uses

Sikafloor®-25 PurCem® ECF may only be used by experienced professionals. It is used in areas of medium to high mechanical loading and abrasion, where high chemical exposure and conductive requirements demand a smooth, flat wearing course such as in:

- Chemical and explosive storage and handling areas
- chemical and pharmaceutical production plants
- Food processing plants
- In dry or wet process areas
- Freezers and coolers
- Thermal shock areas explosive dust environment
- Workshops and laboratories.

Characteristics / Advantages

- Good conductivity. Fulfills the conductivity requirements from ATEX 137
- Good chemical resistance
- Bio-static surface
- Very low VOC emissions
- Odourless
- High mechanical and impact resistance
- Good abrasion resistance
- Similar coefficient of thermal expansion to concrete
- Seamless
- Tolerant to substrate moisture
- High bond strength
- Very high softening point
- Good slip resistance for added safety
- Non-absorbent surface finish
- Easy to clean and maintain



Environmental Information

EU Regulation 2004/42 VOC - Decopaint Directive	USGBC LEED® Rating: Conforms Section EQ (Indoor Environmental Quality), Credit 4.2 Low-Emitting Materials Paints and Coatings. Calculated VOC content ≤ 50 g/l.
USGBC LEED® Rating	Conforms Section EQ (Indoor Environmental Quality), Credit 4.2 Low-Emitting Materials Paints and Coatings. Calculated VOC content ≤ 50 g / l

Tests

Approval / Standards	<ul style="list-style-type: none">• Conforms to the requirements of EN 13813: 2002 as CT - C50 - F15 - ARO.5 - IR 20• Conforms to the requirements of EN 1504-2 for principles 5 (PR) and 6 (CR) as a coating (C)• Impact resistance values tested at PRA Coatings Technology Center, Hampton Moddlesex, UK. Test report No. 75221-151b, dated April, 2012• Slip resistance properties according to DIN EN 51130 tested at Test Institute MPI, Test report No. 12 6637 - S / 12, August 2012• Classification of reaction to fire performance acc. EN 13501-1, tested at EXOVA Warringtonfire, Warrington, UK. Test Report No. 318327, dated May 24th, 2012• Conforms to the requirements of: EN1186, EN 13130, prCENTS 14234 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. Test report by ISEGA, 37970 U 141, June 2014
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Product Data

Form

Appearance / Colours	<p>Part A pre-tinted: coloured liquid Part B: brown liquid Part C: natural grey powder Part D: Black carbon fibres</p> <p>Appearance of the ready for use product: Smooth-textured surface, matt finish Standard colours: Beige, Maize Yellow, Traffic Red, Oxide Red, Sky Blue, Dark Green, Light Grey, Dark Grey, Telegrey</p> <p>Colours are approximately similar to the colours with the same name from RAL Shade Card, but which is no longer used as reference. Due to the technology used, colour stability of the products cannot be guaranteed when exposed to UV radiation.</p>
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Packaging	<p>Part A+B+C: 10.82 Litre (20.012 kg) ready to mix units</p> <p>Part A: 3.00 kg plastic drum Part B: 3.00 kg plastic jerry can Part C: 14.00 kg plastic lined, double paper bags Part D: 0.012 kg small plastic bags</p>
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Storage

Storage Conditions / Shelf-Life	<p>If stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +10°C and +25°C.</p> <p>Part A: 12 months from date of production. Protect from freezing. Part B: 12 months from date of production. Protect from freezing Part C: 6 months from date of production. Protect against humidity. Part D: 24 months from date of production. Protect against humidity</p>
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Technical Data

Chemical Base	Polyurethane Cement	
Density	Part A+B+C+D mixed: ~ 1.85 kg/l ± 0.03 (at +20°C)	(EN ISO 2811-1)
Layer Thickness	~ 6 mm (Scratch coat & Body coat)	
Shore D hardness	~80	(DIN53505)

Mechanical / Physical Properties

Compressive Strength	> 44 MPa after 28 days at +23°C / 50% r.h. > 50 N/mm ² after 28 days at +23°C / 50% r.h.	(ASTM C 579) (BS EN 13892-2)
Tensile Strength	> 15.0 MPa after 28 days at +23°C / 50% r.h.	(DIN EN13892-2)
Tensile Adhesion Strength	> 1.5 N/mm ² (failure in concrete) (1.5 N/mm ² is the minimum pull off strength of the recommended concrete substrate)	(ISO 4624)

Resistance

Chemical Resistance	Sikafloor®-25 PurCem® ECF is resistant to many chemicals. Contact Sika technical service for specific information.	
Thermal Resistance	The product (6 mm thickness) is suitable for use when exposed to continuous temperatures, wet or dry, of up to +90 °C. The minimum service temperature is -40 °C	
Electrostatic Behaviour	Typical Average resistance to ground ¹ 10 ⁵ - 10 ⁸ Ohm ¹ Readings may vary depending on ambient conditions (e.g. temperature, humidity) and measurement	(EN 1081)

System Information

System Structure	Please refer to the System Data Sheet of: Sikafloor® HS-25 ECF A self-levelling, medium to heavy duty, electrostatic conductive, coloured, water dispersed polyurethane modified cementitious screed	
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Application Details

Consumption / Dosage	<i>For primers, see respective PDS)</i> <i>Scratch coat:</i> Sikafloor®-25 PurCem® ECF (partA+B+C) 2 kg/m ² for a 1 mm layer, <i>Self-smoothing screed:</i> Sikafloor®-25 PurCem® ECF (partA+B+C) ~ 1.6 kg/m ² / mm layer thickness.	
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Substrate Quality	<p>The concrete substrate must be sound and of sufficient compressive strength (minimum 25 N/mm²) with a minimum pull off strength of 1.5 N/mm². The substrate must be sound clean and free of all contaminations such as oil, grease, coatings and surface treatments etc. The substrate can be dry or damp with no free standing water (saturated surface dry or SDD). 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. All free edges and working day joints of Sikafloor®-25 PurCem® ECF, whether at the perimeter, along gutters or 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®-25 PurCem® ECF.</p> <p>Substrate priming (prior the scratch coat) is normally not required under typical circumstances. However due to variations in concrete quality, surface conditions, surface preparation and ambient conditions, reference areas are recommended to determine whether priming is required in order to prevent the possibility of blisters, debonding pinholes and other aesthetic variations.</p> <p>If in doubt, apply a test area first.</p>	
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Substrate Preparation	Refer to the Sikafloor®- PurCem® method statement Sikafloor®-25 PurCem® ECF does not require a retaining groove around perimeter or obstacles as the rest of the Sikafloor® PurCem® range requires.	
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Application Conditions / Limitations

Substrate Temperature +10°C min. / +30°C max.

Ambient Temperature +10°C min. / +30°C max.

Substrate Humidity Can be installed on substrates with higher moisture content (6% checked by Sika Tramex). The substrate needs to be visible dry. No ponding water. Checking rising moisture.

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.

Application Instructions

Mixing Part A : B : C = 1 : 1 : 4.35 (packaging size = 3.0 : 3.0 : 14) by weight
Mix full units only.

Mixing Time Homogenise part A with a low speed electric stirrer, add part B and mix part A+B for 30 seconds. Make sure all pigment is uniformly distributed Use powerful twin paddle mixer or action forced mixer and gradually add part C (aggregate) and part D (carbon fibres) to the mixed resin parts over period of 15 seconds. **DON'T DUMP!** Mixing time for A+B+C+D is = 3:30 minutes.
Allow part C+D to blend further according to above mentioned mixing times, to ensure complete distribution of the conductive carbon fibres and obtaining a uniform moist mix. 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+D) to ensure complete mixing. Mix full units only.

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.

For best results, always use clean containers to prepare the mix. Thus you will avoid contamination with already hardened material or shortened pot life due to accelerated setting caused by the increased temperature of the mix.

Application Method / Tools Please refer to Sika Method Statement: "MIXING & APPLICATION OF FLOORING SYSTEMS"

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

Potlife

Temperature	Time Standard version
+15°C	~ 45 - 50 minutes
+20°C	~ 20 - 25 minutes
+30°C	~ 15 - 18 minutes

Notes on Application / Limitations

- Construction joints require pre-treatment with a stripe coat to verify and seal loss of material through the joint.
- It is necessary to create 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 Method Statement for Application, to prevent curling during curing. Large areas do not require additional intermediate grooves. Width and depth must be twice the thickness of the floor finish.
- Always ensure good ventilation when using Sikafloor®-25 PurCem® ECF in a confined space, to prevent excessive ambient humidity.
- Sikafloor®-25 PurCem® ECF shares the resin (part A) and hardener (part B) with other Sikafloor®-PurCem® products and in particular with Sikafloor®-25 S PurCem® ECF. Make sure the correct pack sizes of aggregate are used.
- After application, Sikafloor®-25 PurCem® ECF must be protected from damp, condensation and direct water contact (rain) for 24 hours.
- Hot steam cleaning may lead to delamination due to thermal shock.
- For consistent results it is advised to always use the scratch coat prior to placing Sikafloor®-25 PurCem® ECF on any substrate.
- Protect the substrate during application from condensation from pipes or any overhead leaks.
- 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 yellowing when exposed to UV radiation. There are no measurable losses of other 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.
- Do not apply to cracked or unsound substrates.
- Do not apply to wet or green concrete or polymer modified patches if the moisture content is above 10%.
- Do not feather edge.
- Do not apply to PCC (polymer modified cement mortars) that may expand when sealed with an impervious resin.
- Do not apply to water soaked, glistening wet concrete substrates.
- Do not apply to porous surfaces where significant moisture vapour transmission (out-gassing) will occur during application.
- 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.
- 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 3 days.

Curing Details

Curing Time

Sikafloor®-25 PurCem® ECF

Substrate temperature	Minimum	Maximum
+15°C	~ 24 hours	~ 72 hours
+20°C	~ 14 hours	~ 48 hours
+30°C	~ 12 hours	~ 24 hours

Note: Times are approximate and will be affected by changing ambient and substrate conditions.

Cleaning / Maintenance

Methods

To maintain the appearance of the floor after application, Sikafloor®-25 PurCem® ECF must have all spillages removed immediately and be regularly cleaned. Please refer to the "Sikafloor®- CLEANING REGIME"

Value Base 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.

Local Restrictions Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

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 Material Safety Data Sheet 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.



Sika South Africa (Pty) Ltd
9 Hocking Place,
Westmead, 3608
South Africa

E-mail: headoffice@za.sika.com
Phone +27 31 792 6500
Telefax +27 31 700 1760
www.sika.co.za

