

## PRODUCT DATA SHEET

# Sikafloor®-25 PurCem® ECF

POLYURETHANE HYBRID FLOW APPLIED HEAVY DUTY CONDUCTIVE SMOOTH FLOOR SCREED



### DESCRIPTION

Sikafloor®-25 PurCem® ECF is a 4-part polyurethane hybrid flow applied medium-heavy duty conductive water based coloured smooth matt self-smoothing floor screed finish. It is applied in 6.0 mm thickness and is suitable for internal use. Provides a seamless, chemical, impact, heat, abrasion resistant, easy cleanable, low maintenance surface in dry process areas.

### USES

- Sikafloor®-25 PurCem® ECF may only be used by experienced professionals.
- 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. Fulfils the conductivity requirements from ATEX 137.
- Seamless
- Good chemical, abrasion, impact and thermal resistance
- Easy application
- Tolerant to substrates with high moisture content
- Smooth, matt finish
- Easy cleanability
- Low maintenance

### SUSTAINABILITY

Conformity with LEED v2009 IEQc 4.2: Low-Emitting Materials - Paints and Coatings

### APPROVALS / CERTIFICATES

- CE Marking and Declaration of Performance to EN 13813 - Cementitious / resin screed material for use internally in buildings.
- Impact resistance values tested at PRA Coatings Technology Centre, Hampton Middlesex, 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 Warrington fire, Warrington, UK. Test Report No. 318327, dated May 24th, 2012
- Conforms to the requirements of: EN1186, EN 13130, prCEN/TS 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

### PRODUCT INFORMATION

Chemical base

Water-based polyurethane cement hybrid

<b>Packaging</b>	Parts A + B + C + D:	3 + 3 + 13 + 0,012 = 19,012 kg ready to mix unit
	Part A:	3 kg plastic pail
	Part B:	3 kg plastic jerry can
	Part C:	13 kg plastic lined, double paper bag
	Part D:	0,012 kg small plastic bags
<b>Appearance / Colour</b>	Part A:	Coloured liquid
	Part B:	Brown liquid
	Part C:	Grey powder
	Part D:	Black carbon fibres
	<p>Appearance of applied product: Smooth matt finish Standard colours: Beige, Oxide Red, Sky Blue, Grass Green, Pebble Grey, Light Grey, Dusty Grey, Agate Grey. Applied colours selected from colour charts will be approximate.</p> <p>It is recommended that applied colour samples should be compared against colour chart colours under the same lighting conditions before final selection. When product is exposed to direct sunlight there may be some discolouration and colour variation, this has no influence on the function and performance of the coating. Product can be used outside provided discolouration is acceptable by the customer.</p>	
<b>Shelf life</b>	Part A:	12 months from the date of production. <b>Protect from freezing.</b>
	Part B:	12 months from the date of production. <b>Protect from freezing.</b>
	Part C:	6 months from the date of production. <b>Protect against humidity.</b>
	Part D:	24 months from the date of production. <b>Protect against humidity.</b>
	<b>Storage conditions</b> Original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +5°C and max. +25°C. Always refer to packaging.	
<b>Density</b>	Mixed resin (all parts):	1,89 kg/l ± 0,03 (EN ISO 2811-1) All density values at +22°C.
<b>Product Declaration</b>	EN 13813 - Cementitious / resin screed material for use internally in buildings. Class CT - C50 - F15 - ARO.5 - IR 20	

## TECHNICAL INFORMATION

<b>Shore D Hardness</b>	~ 80	(DIN 53505)
<b>Compressive Strength</b>	~ 50 N/mm <sup>2</sup>	(DIN EN 13892-2)
<b>Tensile Strength</b>	~ 15 N/mm <sup>2</sup>	(DIN EN13892-2)
<b>Tensile Adhesion Strength</b>	>1.5 N/mm <sup>2</sup> (failure in concrete)	(ISO 4624)
<b>Chemical Resistance</b>	Sikafloor®-25 PurCem® ECF is resistant to many chemicals. Contact Sika's Technical Service for specific information.	
<b>Thermal Resistance</b>	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.	
<b>Electrostatic Behaviour</b>	Typical average resistance to ground <sup>1)</sup>	10 <sup>5</sup> - 10 <sup>8</sup> Ohm (EN 1081)

<sup>1)</sup> Readings may vary depending on ambient conditions (e.g. temperature, humidity) and measurement.

## SYSTEMS

<b>Systems</b>	Please refer to the System Data Sheet of: <b>Sikafloor® HS-25 ECF</b>	Self-levelling, medium to heavy duty, electrostatic conductive, coloured, water dispersed polyurethane modified cementitious screed
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## APPLICATION INFORMATION

<b>Mixing Ratio</b>	Part A : B : C = 1 : 1 : 4.33 (by weight) Part C includes fibers mixed from Part D.		
<b>Consumption</b>	~ 1.89 kg/m <sup>2</sup> /mm		
<b>Layer Thickness</b>	~ 6 mm (Scratch coat & Wearing finish)		
<b>Ambient Air Temperature</b>	+15°C min. / +30°C max.		
<b>Relative Air Humidity</b>	80 % max.		
<b>Dew Point</b>	Beware of condensation. The substrate and uncured floor must be at least 3 °C above the dew point to reduce the risk of condensation or blooming on the floor finish.		
<b>Substrate Temperature</b>	+15°C min. / +30°C max.		
<b>Substrate Moisture Content</b>	≤ 6% pbw Test method: Sika®-Tramex meter, CM-measurement or Ovendry-method. No rising moisture according to ASTM (Polyethylenesheet). Substrate visibly dry with no standing water.		
<b>Pot Life</b>	<b>Ambient Temperatures</b>	<b>Time</b>	
	+15 °C	~ 45 - 50 min	
	+20 °C	~ 20 - 25 min	
	+30 °C	~ 15 - 18 min	
<b>Curing Time</b>	<b>Substrate Temperature</b>	<b>Minimum</b>	<b>Maximum</b>
	+15 °C	24 hours	72 hours
	+20 °C	14 hours	48 hours
	+30 °C	12 hours	24 hours

Ensure scratch coat layer is fully hardened and tack free before application of Sikafloor®-25 PurCem® ECF. Times are approximate and will be affected by changing ambient and substrate conditions, particularly temperature and relative humidity.

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY / PRE-TREATMENT

- Cementitious substrates (concrete / screed) shall be sound and of sufficient compressive strength (minimum 25 N/mm<sup>2</sup>) with a minimum tensile strength of 1,5 N/mm<sup>2</sup>.
- Substrates shall be clean, dry and free of all contaminants such as dirt, oil, grease, coatings and surface treatments, e.t.c.
- Cementitious substrates shall be prepared mechanically using suitable abrasive blast cleaning or planing / scarifying equipment to remove cement laitance and achieve an open textured surface profile suitable for the product thickness. (Reference: CSP 3-6 International Concrete Repair Institute or equivalent).
- Weak cementitious substrates must be removed and surface defects such as blow holes and voids must be fully exposed.
- Repairs to the substrate, filling of cracks, blowholes/voids and surface levelling must be carried out using appropriate products from the Sikafloor®, Sikadur® and Sikagard® range of materials. Products must be cured before applying Sikafloor®-25 PurCem® ECF.
- All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by vacuum cleaning equipment.
- 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.
- Substrate priming (prior to the scratch coat) is normally not required under typical circumstances. However due to variations in concrete quality, sur-

face condition, 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. If in doubt, apply a test area first.

## MIXING

Prior to mixing all parts, mix separately part A using a low speed single paddle electric stirrer (300 - 400 rpm) to mix liquid and all the coloured pigment until a uniform colour has been achieved. Add part B to part A and mix part A + B continuously for 30 seconds until a uniform coloured mix has been achieved. When parts A and B have been mixed, and while using a pan type revolving or forced action mixer (free fall mixers must not be used), gradually add part C (aggregate/sand) over a period of 30 seconds. To avoid lumps in mix, don't dump Part C into parts A + B. Add part D and mix for a further 3 minutes until a smooth consistent mix has been achieved. Over mixing must be avoided to minimise air entrainment. 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. Mix full units only. Mixing time for A+B+C+D = 4 minutes.

Note: The carbon fibres (part D) must be added to parts A+B+C immediately after adding part C. Allow parts C+D to mix according to the above mentioned mixing time for all parts to ensure complete distribution of the conductive carbon fibres.

## APPLICATION

Refer to the Sikafloor®-25 PurCem® ECF Method Statement.

## CLEANING OF TOOLS

Removal of fresh remnants from tools and application equipment can be carried out using Thinner C immediately after use. Hardened / cured material can only be mechanically removed.

## MAINTENANCE

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

## CLEANING

Please refer to the "Sikafloor®- CLEANING REGIME".

## FURTHER DOCUMENTS

### Substrate quality & Preparation

Please refer to Sika Method Statement: "EVALUATION AND PREPARATION OF SURFACES FOR FLOORING SYSTEMS".

### Application instructions

Please refer to Sika Method Statement: "MIXING & APPLICATION OF FLOORING SYSTEMS".

## LIMITATIONS

- After application, Sikafloor®-25 PurCem® ECF must be protected from damp, condensation and direct water contact (rain) for 24 hours.
- The incorrect assessment and treatment of cracks may lead to a reduced service life and reflective cracking.
- Construction joints and existing static surface cracks require pre-treating with a stripe coat by prefilling and levelling to seal against loss of material through the joint or cracks before full layer application. Use Sikadur® or Sikafloor® resins.
- If heating is required do not use gas, oil, paraffin or other fossil fuel heaters, these produce large quantities of both CO<sub>2</sub> and H<sub>2</sub>O water vapour, which may adversely affect the finish. For heating use only electric powered warm air blower systems.
- Retaining grooves 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.
- Always ensure good ventilation when using Sikafloor®-25 PurCem® ECF in a confined space, to prevent excessive ambient humidity.
- 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.
- Sikafloor®-25 PurCem® ECF shares the resin (part A) and hardener (part B) with other Sikafloor®-PurCem® products. Make sure the correct pack sizes of Part C (aggregate) are used.
- 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 and Sikafloor®-25 PurCem® ECF during application from pipe condensation or any overhead leaks.
- Always allow a minimum of 48 hours after product application prior to placing food products onto the same floor area.
- 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.
- Hot steam cleaning may lead to delamination due to thermal shock.
- Do not apply to cracked or unsound substrates.
- Do not featheredge.
- Do not apply to wet or green concrete or polymer modified repair patches if the moisture content is above 10 %.
- 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.

cur during application.

- Do not apply to un-reinforced sand cement screeds, asphaltic or bituminous substrates, glazed or un-glazed tiles. Magnesite, copper, aluminium, wood or urethane compositions, elastomeric membranes or fibre reinforced plastic (FRP) composites.

## 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.

## 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.

## 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.

Sika Hellas ABEE  
15 Protomagias Str.  
14568 Kryoneri  
Attica-Greece  
Tel.: +30 210 8160 600  
Fax: +30 210 8160 606  
www.sika.gr | sika@gr.sika.com



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