

PRODUCT DATA SHEET

Sikafloor®-161

2-part epoxy primer, levelling mortar, intermediate layer and mortar screed

DESCRIPTION

Sikafloor-161 is an economic, two part, low viscosity epoxy resin.

"Total solid epoxy composition acc. to the test method Deutsche Bauche-mie e.V. (German Association for construction chemicals)"

USES

Sikafloor®-161 may only be used by experienced professionals.

- For priming concrete substrates, cement screeds and epoxy mortars
- For low to medium absorbent substrates
- Primer for the Sikafloor-263 SL and Sikafloor-264 economic flooring systems
- Binder for levelling mortars and mortar screeds
- Intermediate layer underneath Sikafloor-263 SL and Sikafloor-264

CHARACTERISTICS / ADVANTAGES

- Low viscosity
- Good penetration
- Excellent bond strength even on water saturated concrete
- Easy application
- Short waiting times
- Multi-purpose

APPROVALS / CERTIFICATES

Proof statement to determine the compatability of coating and water saturated concrete Report-No. P 5688 Polymer Institute, Germany, May 2009

USGBC LEED RATING:

Sikafloor-161 conforms to the requirements of LEED EQ Credit 4.2: Low-Emitting Materials: Paints & Coatings SCAQMD Method 304-91 VOC Content < 100 g/l

PRODUCT INFORMATION

Composition	Epoxy		
Packaging	Part A:	23.7 kg	
	Part B:	6.3 kg	
	Part A+B:	30 kg ready to mix unit	
	Part A:	220 kg drums	
	Part B:	177 kg, 59kg drums	
	Part A+B:	1 Drum Part A (220 kg) + 1 drum Part B (59 kg) = 279 kg	
		3 Drums Part A (220 kg) + 1 Drum Part B (177 kg) = 837 kg	
Appearance / Colour	Part A	Resin	brownish-transparent, liquid
	Part B	Hardener	transparent, liquid

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Shelf life	24 months from date of production.	
Storage conditions	Product should be stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +5°C and +30°C.	
Density	Part A: ~ 1.6 kg/l Part B: ~ 1.0 kg/l Mixed mortar: ~ 1.4 kg/l All Density values at +23°C.	DIN EN ISO 2811-1
Solid content	Resin: ~ 100% (by volume) / ~ 100% (by weight)	

TECHNICAL INFORMATION

Shore Hardness	76 (7days / +23°)	DIN 53505 / ASTM D 2240
Compressive Strength	Mortar screed*: ~ 45 N/mm ² (28 days / +23°C / 50% r.h.)	EN 13892-2
	*Mortar screed: SR-161 mixed 1:10 with SR-280 filler	
Tensile Strength in Flexure	Mortar screed: ~ 15 N/mm ² (28 days / +23°C / 50% r.h.)	EN 13892-2
Tear Strength	> 1.5 N/mm ² (failure in concrete)	EN 4624
Temperature Resistance	Exposure*	Dry heat
	Permanent	+50°C
	Short term max. 7 d	+80°C
	Short term max 12 h	+100°C
	Short-term moist/wet heat* up to +80°C where exposure is only occasional (steam cleaning etc.).	
	*No simultaneous chemical and mechanical exposure and only in combination with Sikafloor systems as a broadcast system with approx. 3 - 4 mm thickness	

SYSTEM INFORMATION

System	Primer: Low/medium porosity concrete	1 x Sikafloor-161
	Levelling mortar fine (surface roughness < 1 mm): Primer	1 x Sikafloor-161
	Levelling mortar	1 x Sikafloor-161 + quartz sand (0.1 - 0.3 mm) + Extender T
	Levelling mortar medium (surface roughness up to 2 mm): Primer	1 x Sikafloor-161
	Levelling mortar	1 x Sikafloor-161 + quartz sand (0.1 - 0.3 mm) + Extender T
	Epoxy Screed (15 - 20 mm layer thickness) / Repair Mortar Primer	1 x Sikafloor-161
	Bonding bridge	1 x Sikafloor-161
	Screed	1 x Sikafloor-161 + suitable sand mixture

In practice the following sand mixtures proved to be suitable (grain size distribution for layer thicknesses of 15 - 20 mm):

25 pbw quartz sand 0.1 - 0.5 mm

25 pbw quartz sand 0.4 - 0.7 mm

25 pbw quartz sand 0.7 - 1.2 mm

25 pbw quartz sand 2 - 4 mm

Note: The largest grain size should be a maximum 1/3 of the finished layer thickness. Dependent on the grain shape and application temperatures, the aggregates and the most suitable mix should be selected.

APPLICATION INFORMATION

Mixing Ratio	Part A : part B = 79 : 21 (by weight)	
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Consumption	Primer	
	Product	Consumption
	1-2 x Sikafloor®-161	1-2 x 0.3 - 0.5 kg/m ²

Levelling mortar fine (surface roughness < 1 mm)		
Product	Consumption	
1 pbw Sikafloor®-161 + 0.5 pbw quartz sand (0.1 -0.3 mm) + 0.015 pbw Extender T	1.4 kg/m ² /mm	

Levelling mortar medium (surface roughness up to 2 mm)		
Product	Consumption	
1 pbw Sikafloor®-161 + 1 pbw quartz sand (0.1 - 0.3 mm) + 0.015 pbw Extender T	1.6 kg/m ² /mm	

Intermediate layer (self-smoothing 1.5 to 3 mm)		
Product	Consumption	
1 pbw Sikafloor®-161 + 1 pbw quartz sand (0.1 - 0.3 mm)	1.9 kg/m ² /mm	
+ optional broadcast quartz sand 0.4 - 0.7 mm	~ 4.0 kg/m ²	

Bonding Bridge		
Product	Consumption	
1-2 x Sikafloor®-161	1- 2 x 0.3 - 0.5 kg/m ²	

Epoxy Screed (15 - 20 mm layer thickness) / Repair Mortar		
Product	Consumption	
1 pbw Sikafloor®-161 + 8 pbw quartz sand	2.2 kg/m ² /mm	

Note: These figures are theoretical and do not allow for any additional material required due to surface porosity, surface profile, variations in level or wastage etc.

Ambient Air Temperature	+10°C min. / +30°C max.
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Relative Air Humidity	80 % r.h. max.
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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. Note: Low temperatures and high humidity conditions increase the prob-
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ability of blooming.

Substrate Temperature	+10°C min. / +30°C max.	
Substrate Moisture Content	< 6% pbw moisture content using the Sika-Tramex meter (at the time of application). Please note that the moisture content must be < 4 % pbw when using the CM-measurement or Oven-dry-method. Test method: Sika-Tramex meter, CM - measurement or Oven-dry-method. No rising moisture according to ASTM (Polyethylene-sheet).	
Pot Life	Temperature	Time
	+10°C	~ 50 minutes
	+20°C	~ 25 minutes
	+30°C	~ 15 minutes

Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity.

Curing Time	Before applying solvent free products on Sikafloor®-161 allow:		
	Substrate temperature	Minimum	Maximum
	+10°C	24 hours	4 days
	+20°C	12 hours	2 days
	+30°C	6 hours	1 days

Before applying solvent containing products on Sikafloor®-161 allow:

Substrate temperature	Minimum	Maximum
+10°C	36 hours	6 days
+20°C	24 hours	4 days
+30°C	12 hours	2 days

Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity.

Applied Product Ready for Use	24 hours			
	Temperature	Foot traffic	Light traffic	Full cure
	+10°C	24 hours	~ 6 days	~ 10 days
	+20°C	12 hours	~ 4 days	~ 7 days
	+30°C	6 hours	~ 2 days	~ 5 days

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

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

Substrate quality:

Concrete substrates 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 clean, dry and free of all contaminants such as dirt, oil, grease, coatings and surface treatments, etc.

On critical substrates, e.g a strong absorbent cementitious surface, the application of a trial area is highly recommended, in order to ensure a porefree surface, after priming.

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.

Weak concrete must be removed and surface defects such as blowholes 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.

The concrete or screed substrate has to be primed or levelled in order to achieve an even surface.

High spots must be removed by e.g. 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.

MIXING

Prior to mixing, stir part A mechanically. When all of

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part B has been added to part A, mix continuously for 3 minutes until a uniform mix has been achieved. When parts A and B have been mixed, the quartz sand or if required the Extender T must be mixed with part A and B for a further 2 minutes until a uniform mix has again been achieved.

To ensure thorough mixing pour materials into another container and mix again to achieve a consistent mix. Over mixing must be avoided to minimise air entrapment.

Sikafloor-161 must be thoroughly mixed using a low speed electric stirrer (300-400 rpm) or other suitable equipment. For the preparation of mortars use a forced action mixer of rotating pan, paddle or trough type. Free fall mixers should not be used.

APPLICATION

Prior to application, confirm substrate moisture content, r.h. and dew point. If > 4% pbw moisture content, Sikafloor EpoCem may be applied as a T.M.B. (temporary moisture barrier) system.

Primer:

Make sure that a continuous, pore free coat covers the substrate. If necessary, apply two priming coats. Apply Sikafloor-161 by brush, roller or squeegee. Preferred application is by using a squeegee and then backrolling crosswise.

Levelling mortar:

Rough surfaces need to be levelled first. Apply the levelling mortar by squeegee/trowel to the required thickness.

Intermediate layer

Sikafloor-161 is poured, spread evenly by means of a serrated trowel. Roll immediately in two directions with spiked roller to ensure even thickness and if required broadcast with quartz sand, after about 15 minutes (at +20°C) but before 30 minutes (at +20°C), at first lightly and then to excess.

Bonding bridge:

Apply Sikafloor-161 by brush, roller or squeegee. Preferred application is by using a squeegee and then backrolling crosswise.

Epoxy screed / repair mortar:

Apply the mortar screed evenly on the still "tacky" bonding bridge, using levelling battens and screed rails as necessary. After a short waiting time compact and smoothen the mortar with a trowel or Teflon coated power float (usually 20 - 90 rpm).

CLEANING OF EQUIPMENT

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

IMPORTANT CONSIDERATIONS

Do not apply Sikafloor-161 on substrates in which

rising moisture.

Freshly applied Sikafloor-161 should be protected from damp, condensation and water for at least 24 hours.

Sikafloor-161 mortar screed is not suitable for frequent or permanent contact with water unless sealed. Practical trials should be carried out for mortar mixes to assess suitable aggregate grain size distribution. For external applications, apply on a falling temperature. If applied during rising temperatures "pin holing" may occur from rising air.

These pinholes can be closed after a soft grinding by applying a scratch coat of Sikafloor-161 mixed with approx. 3 % of Extender T.

Tools:

Recommended supplier of tools:

PPW-Polyplan-Werkzeuge GmbH, Phone: +49 40/5597260, www.polyplan.com

Construction joints require pre-treatment. Treat as follows:

- Static Cracks: prefill and level with SikaDur or Sikafloor epoxy resin
- Dynamic cracks: to be assessed and if necessary apply a stripe coat of elastomeric material or design as a movement joint

The incorrect assessment and treatment of cracks may lead to a reduced service life and reflective cracking. Under certain conditions, underfloor heating or high ambient temperatures combined with high point loading, may lead to imprints in the resin. If heating is required do not use gas, oil, paraffin or other fossil fuel heaters, these produce large quantities of both CO₂ and H₂O water vapour, which may adversely affect the finish. For heating use only electric powered warm air blower systems.

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

CE MARK:

Please refer to Declaration of performance.

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.

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DIRECTIVE 2004/42/CE LIMITATION OF EMISSIONS OF VOC

According to the EU-Directive 2004/42, the maximum allowed content of VOC (Product category IIA / j type **sb**) is 500 g/l (Limit 2010) for the ready to use product. The maximum content of Sikafloor®-161 is < 500 g/l VOC for the ready to use product.

Sikafloor®-161 conforms to the requirements of LEED EQ Credit 4.2: low-Emitting Materials: Paints & Coatings SCAQMD Method 304-91 VOC Content < 100 g/l.

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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