

PRODUCT DATA SHEET

Sikafloor®-161

2-PART EPOXY PRIMER, LEVELLING MORTAR, INTERMEDIATE LAYER AND MORTAR SCREED

PRODUCT DESCRIPTION

Sikafloor®-161 is an economic, two part, low viscosity epoxy resin. "Total solid epoxy composition acc. to the test method Deutsche Bauchemie e.V. (German Association for construction chemicals)"

USES

Sikafloor®-161 installation works to be carried out only by Sika Approved Contractors. Please observe information given by Product Data Sheets.

- 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
- Easy application
- Short waiting times
- Multi-purpose

ENVIRONMENTAL INFORMATION

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

APPROVALS / STANDARDS

- Epoxy primer, levelling mortar and mortar screed according to EN 1504-2: 2004 and EN 13813:2002, DoP 02 08 01 02 005 0 000004 1008, certified by Factory Production Control Body No. 0921 and provided with the CE-mark.
- Coating for surface protection of concrete according to EN 1504-2:2004, Declaration of Performance 02 08 01 02 005 0 000004 1008, certified by notified factoryproduction control certification body 0921, and provided with the CE marking.
- "Products and systems for the protection and repair of concrete structures–Test method – Compatibility on wet concrete when exposed to the effects of humidity from the rear" according to the DIN EN 13578:2004.Proof statement P 6239

PRODUCT INFORMATION

Chemical Base	Epoxy		
Packaging	Part A	23.7 kg containers	
	Part B	6.3 kg containers	
	Part A+B	30 kg ready to mix units	
	Part A	220 kg drums	
	Part B	177 kg drums	
	Part A+B	3 Drums Part A (220kg) + 1 drum Part B (177kg) =837 kg	
Appearance / Colour	Resin - Part A	brownish-transparent, liquid	
	Hardener - Part B	transparent, liquid	
Shelf Life	24 months from date of production		
Storage Conditions	Store 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	(DIN EN ISO 2811-1)
	Part B	~ 1.0 kg/l	
	Mixed Resin	~ 1.4 kg/l	
	All density values at +23°C		
Solid content by weight	~100%		
Solid content by volume	~100%		

TECHNICAL INFORMATION

Shore D Hardness	~76 (7 days / +23°C)	(DIN 53 505)
Compressive Strength	Mortar screed*: ~ 45 N/mm ² (28 days / +23°C / 50% r.h.)	(EN 13892-2)
	*Mortar screed: Sikafloor®-161 mixed 1:10 with Sikafloor®-280 filler	
Flexural Strength	Mortar screed: ~ 15 N/mm ² (28 days / +23°C / 50% r.h.)	(EN 13892-2)
Tensile Adhesion Strength	> 1.5 N/mm ² (failure in concrete)	(Standard)
Thermal 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

Systems

Primer:	
Low / medium porosity concrete	1-2 x Sikafloor®-161
Levelling mortar fine (surface roughness < 1 mm):	
Primer	1-2 x Sikafloor®-161
Levelling mortar	1 x Sikafloor®-161 + quartz sand (0.06 - 0.3 mm)
Levelling mortar	
Levelling mortar medium (surface roughness up to 2 mm):	
Primer	1-2 x Sikafloor®-161
1 x Sikafloor®-161 + quartz sand (0.1 - 0.3 mm)	
Intermediate layer (self-smoothing 1.5 to 3 mm):	
Primer	1 x Sikafloor®-161
Levelling mortar	1 x Sikafloor®-161 + quartz sand (0.06 - 0.3 mm)
Epoxy screed (15 - 20 mm layer thickness) / repair mortar:	
Primer	1-2 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 0.06 - 0.3 mm

25 pbw quartz sand 0.3 - 0.8 mm

25 pbw quartz sand 0.6 - 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)		
Consumption	Coating System	Product	Consumption
	Priming	1- 2 x Sikafloor®-161	1-2 x 0.35 - 0.55 kg/m ²
	Levelling mortar fine (surface roughness < 1 mm)	1 pbw Sikafloor®-161 + 0.5 pbw quartz sand (0.06 - 0.3 mm)	1.7 kg/m ² /mm
	Levelling mortar medium (surface roughness up to 2 mm)	1 pbw Sikafloor®-161 + 1 pbw quartz sand (0.06 - 0.3 mm)	1.9 kg/m ² /mm
	Intermediate layer (self-smoothing 1.5 to 3 mm)	1 pbw Sikafloor®-161 + 1 pbw quartz sand (0.06 - 0.3 mm)	1.9 kg/m ² /mm
		+ optional broadcast quartz sand 0.3 – 0.8 mm	~ 4.0 kg/m ²
	Bonding bridge	1- 2 x Sikafloor®-161	1- 2 x 0.3 - 0.5 kg/m ²
	Epoxy screed (15 - 20 mm layer thickness) / Repair Mortar	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.	
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 probability 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
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	8 hours 24 hours
	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	16 hours 2 days
	Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity.	

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

- 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 can be damp but must be free of standing water and free of all contaminants such as oil, grease, coatings and surface treatments etc. If in doubt, apply a test area first.
- 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 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.
- All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush or vacuum.

MIXING

Prior to mixing, stir part A mechanically. When all of 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, add the quartz sand and if required the Extender T and mix for a further 2 minutes until a uniform mix has 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 entrainment.

Mixing Tools

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 back-rolling 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 TOOLS

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

FURTHER DOCUMENTS

Substrate Quality & Preparation

Please refer to Sika Information Manual: "EVALUATION AND PREPARATION OF SURFACES FOR FLOORING SYSTEMS".

Application Instructions

Please refer to Sika Information Manual: "MIXING & APPLICATION OF FLOORING SYSTEMS".

Maintenance

Please refer to "Sikafloor®- CLEANING REGIME".

LIMITATIONS

- Do not apply Sikafloor®-161 on substrates with 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.

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 airblower systems.

Tools:

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

VALUE BASE

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

Local safety regulations must be observed and it advisable to wear PPI when working with this product with particular attention paid to cutting and handling. Transportation Class: The product is not classified as hazardous good for transport. Disposal: The material is recyclable. Disposal must be according to local regulations. Please contact your local Sika sales organisation for more information.

DIRECTIVE 2004/42/CE - LIMITATION OF EMISSIONS OF VOC

According to the EU Directive 2004/42/CE, the maximum allowed content of VOC (product category IIA / j type sb) is 500 g/l (Limits 2010) for the ready to use product.

The maximum content of Sikafloor®-161 is ≤ 500 g/l VOC for the ready to use product.

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, sub-

strates 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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