

Product Data Sheet
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Sikafloor®-161

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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

- For priming concrete substrates, cement screeds and epoxy mortars
- For normal to strong 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

Test

Approval / Standards

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

Product Data

Form

Appearance / Colours

Resin - part A: brownish-transparent, liquid
Hardener - part B: transparent, liquid

Packaging

Part A: 15.8 kg
Part B: 4.29 kg
Part A+B: 20 kg ready to mix unit

Part A: 220 kg drums
Part B: 177 kg,
Part A+B: 3 Drums Part A (220 kg) + 1 Drum Part B (177 kg) = 837 kg

Construction



Storage

**Storage Conditions/
Shelf-Life** 24 months from date of production if stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +5°C and +30°C.

Technical Data

Chemical Base Epoxy

Density Part A: ~ 1.6 kg/l
Part B: ~ 1.0 kg/l
Mixed Resin: ~ 1.4 kg/l (DIN EN ISO 2811-1)
All density values at +23°C

Solid Content ~ 100% (by volume) / ~ 100% (by weight)

Mechanical / Physical Properties

Compressive Strength Resin: ~60 N/mm² (28 days / +23°C / 50% r.h.) (EN 196-1)
Mortar screed*: ~ 45 N/mm² (28 days / +23°C / 50% r.h.) (EN 13892-2)
*Mortar screed: SR-161 mixed 1:10 with SR-280 filler

Flexural Strength Resin: ~20 N/mm² (28 days / +23°C / 50% r.h.) (EN 196-1)
Mortar screed: ~ 15 N/mm² (28 days / +23°C / 50% r.h.) (EN 13892-2)

Bond Strength > 1.5 N/mm² (failure in concrete) (ISO 4624)

Shore D Hardness 76 (7 days / +23°C) (DIN 53 505)

Resistance

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

System Structure

Primer:

Low / medium porosity concrete: 1 x Sikafloor®-161
 High porosity concrete: 2 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

Intermediate layer (self-smoothing 1.5 to 3 mm):

Primer: 1 x Sikafloor®-161
 Levelling mortar: 1 x Sikafloor®-161 + quartz sand (0.1 - 0.3 mm)

Epoxy screed (4 - 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 (Sikadur®-506 for epoxy screeds [4-12mm] and Sikadur®-510 for epoxy screeds [12-20mm])

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 Details

Consumption / Dosage

Coating System	Product	Consumption
Priming	Sikafloor®-161	0.25 - 0.55 kg/m ²
Levelling mortar fine (surface roughness < 1 mm)	1 pbw Sikafloor®-161 + 0.5 pbw quartz sand (0.1 - 0.3 mm) + 0.015 pbw Extender T	1.7 kg/m ² /mm
Levelling mortar medium (surface roughness up to 2 mm)	1 pbw Sikafloor®-161 + 1 pbw quartz sand (0.1 - 0.3 mm) + 0.015 pbw Extender T	1.9 kg/m ² /mm
Intermediate layer (self-smoothing 1.5 to 3 mm)	1 pbw Sikafloor®-161 + 1 pbw quartz sand (0.1 - 0.3 mm) + optional broadcast quartz sand 0.4 - 0.7 mm	1.9 kg/m ² /mm ~ 4.0 kg/m ²
Bonding bridge	Sikafloor®-161	0.3 - 0.5 kg/m ²
Epoxy screed (4 - 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.

The consumption rates are estimating data and are depending on the substrate and jobsite conditions"

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.

If in doubt, apply a test area first.

Substrate Preparation	<p>Concrete substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and achieve an open textured surface.</p> <p>Weak concrete must be removed and surface defects such as blowholes and voids must be fully exposed.</p> <p>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.</p> <p>The concrete or screed substrate has to be primed or levelled in order to achieve an even surface.</p> <p>High spots must be removed by e.g. grinding.</p> <p>All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum.</p>
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Application Conditions / Limitations

Substrate Temperature	+10°C min. / +30°C max.
Ambient Temperature	+10°C min. / +30°C max.
Substrate Moisture Content	<p>< 6% pbw moisture content using the Sika® - Tramex meter (at the time of application).</p> <p>Please note that the moisture content must be < 4 % pbw when using the CM-measurement or Oven-dry-method.</p> <p>Test method: Sika®-Tramex meter, CM - measurement or Oven-dry-method.</p> <p>No rising moisture according to ASTM (Polyethylene-sheet).</p>
Relative Air Humidity	80% r.h. max.
Dew Point	<p>Beware of condensation!</p> <p>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.</p> <p>Note: Low temperatures and high humidity conditions increase the probability of blooming</p>

Application Instructions

Mixing	Part A : part B = 79 : 21 (by weight)
Mixing Time	<p>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.</p> <p>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.</p> <p>To ensure thorough mixing pour materials into another container and mix again to achieve a consistent mix.</p> <p>Over mixing must be avoided to minimise air entrainment.</p>
Mixing Tools	<p>Sikafloor®-161 must be thoroughly mixed using a low speed electric stirrer (300 - 400 rpm) or other suitable equipment.</p> <p>For the preparation of mortars use a forced action mixer of rotating pan, paddle or trough type. Free fall mixers should not be used.</p>

Application Method / Tools

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.

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.

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.

Potlife

Temperature	Time
+10°C	~ 50 minutes
+20°C	~ 25 minutes
+30°C	~ 15 minutes

Waiting Time / Overcoating

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.

Notes on Application / 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.

Avoid puddles on the surface with the primer.

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.

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.

Curing Details**Applied Product ready for use**

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	~ 8 hours	~ 2 days	~ 5 days

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

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 shall 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.



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