

## Sikafloor® -161 HC

2-Part Epoxy Primer, Levelling Mortar, Intermediate Layer and Mortar Screed

<b>Product Description</b>	Sikafloor®-161 HC is an economic, two part, solvent free, low viscosity epoxy resin.	
<b>Uses</b>	<ul style="list-style-type: none"><li>■ For priming concrete substrates, cement screeds and epoxy mortars</li><li>■ For normal to strong absorbent substrates</li><li>■ Primer for the Sikafloor®-263 SL and Sikafloor®-264 economic flooring systems</li><li>■ Binder for levelling mortars and mortar screeds</li><li>■ Intermediate layer underneath Sikafloor®-263 SL HC and Sikafloor®-264</li></ul>	
<b>Characteristics / Advantages</b>	<ul style="list-style-type: none"><li>■ Low viscosity</li><li>■ Good penetration</li><li>■ Excellent bond strength even on water saturated concrete</li><li>■ Easy application</li><li>■ Short waiting times</li><li>■ Multi-purpose</li></ul>	
<b>Tests</b>		
<b>Approval / Standards</b>	Proof statement to determine the compatability of coating and water saturated concrete Report-No. P 5688 Polymer Institute, Germany, May 2009	
<b>Form</b>		
<b>Appearance / Colours</b>	Resin - part A:	Brownish-transparent, liquid
	Hardener - part B:	Transparent, liquid
<b>Packaging</b>	Part A:	280 kg drums
	Part B:	200 kg drums / 75 kg drums
		15 kg sets
<b>Storage</b>		
<b>Storage Conditions/ Shelf Life</b>	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

<b>Chemical Base</b>	Epoxy
<b>Density</b>	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
<b>Solid Content</b>	~ 100% (by volume) / ~ 100% (by weight)

## Mechanical / Physical Properties

<b>Compressive Strength</b>	Resin: ~ 60 N/mm <sup>2</sup> (28 days / +23°C)	(EN 196-1)
<b>Flexural Strength</b>	Resin: ~ 30 N/mm <sup>2</sup> (28 days / +23°C)	(EN 196-1)
<b>Bond Strength</b>	> 1.5 N/mm <sup>2</sup> (failure in concrete)	(ISO 4624)
<b>Shore D Hardness</b>	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 HC
High porosity concrete :	2 x Sikafloor®-161 HC

#### Levelling mortar fine (surface roughness < 1 mm):

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

#### Levelling mortar medium (surface roughness up to 2 mm):

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

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

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

#### Epoxy screed (15 - 20 mm layer thickness) / repair mortar

Primer :	1 x Sikafloor®-161 HC
Bonding bridge :	1 x Sikafloor®-161 HC
Screed :	1 x Sikafloor®-161 HC + 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 Details

### Consumption / Dosage

Coating System	Product	Consumption
Priming	Sikafloor®-161 HC	0.35 - 0.55 kg/m <sup>2</sup>
Levelling mortar fine (surface roughness < 1 mm)	1 pbw Sikafloor®-161 HC + 0.5 pbw quartz sand (0.1 - 0.3 mm) + 0.015 pbw Extender T	1.4 kg/m <sup>2</sup> /mm
Levelling mortar medium (surface roughness up to 2 mm)	1 pbw Sikafloor®-161 HC + 1 pbw quartz sand (0.1 - 0.3 mm) + 0.015 pbw Extender T	1.6 kg/m <sup>2</sup> /mm
Intermediate layer 1 pbw (selfsmoothing 1.5 to 3 mm)	Sikafloor®-161 HC + 1 pbw quartz sand (0.1 - 0.3 mm)  + optional broadcast quartz sand 0.4 – 0.7 mm	1.8 kg/m <sup>2</sup> /mm (0.9 kg/m <sup>2</sup> binder+0.9 kg/m <sup>2</sup> quartz sand) per mm layer thickness  ~ 4.0 kg/m <sup>2</sup>
Bonding bridge	Sikafloor®-161 HC	0.3 - 0.5 kg/m <sup>2</sup>
Epoxy screed (15 - 20 mm layer thickness ) / Repair	1 pbw Sikafloor®-161 HC + 8 pbw quartz sand	2.2 kg/m <sup>2</sup> /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.

### Substrate Quality

Concrete substrates must be sound and of sufficient compressive strength (minimum 25 N/mm<sup>2</sup>) with a minimum pull off strength of 1.5 N/mm<sup>2</sup>.

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

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.

## **Application Conditions / Limitations**

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

**Ambient 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)

**Relative Air Humidity** 80% r.h. max.

**Dew Point** 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.

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## **Application Instructions**

**Mixing** Part A : Part B = 79 : 21 (by weight)

**Mixing Time** 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 HC 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.

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**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 HC 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 HC 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 HC 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.

**Pot Life**

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 HC allow:

Substrate temperature	Minimum	Maximum
+10°C	24 hours	3 days
+20°C	12 hours	2 days
+30°C	8 hours	24 hours

Before applying solvent containing products on Sikafloor®-161 HC 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 HC on substrates with rising moisture. Freshly applied Sikafloor®-161 HC should be protected from damp, condensation and water for at least 24 hours. Avoid puddles on the surface with the primer. Sikafloor®-161 HC 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.

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 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.

## 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.

## 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.

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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