BUILDING TRUST

PRODUCT DATA SHEET

Sikafloor®-161 HC

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

DESCRIPTION

Sikafloor®-161 HC is an economic, two part, solvent free, low viscosity epoxy resin.

USES

Sikafloor®-161 HC is a construction products which only should be applied by trained applicators.

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

CHARACTERISTICS / ADVANTAGES

- Low viscosity
- Good penetration
- Excellent bond strength
- Solvent free
- Easy application
- Short waiting times
- Multi-purpose

PRODUCT INFORMATION

Composition	Epoxy		
Packaging	Part A	15.8 kg bucket	
	Part B	4.2 kg can	
	Part A+B	20 kg set (A+B)	
Appearance / Colour	Part A – Resin :	Liquid, brownish-transparent	
	Part B – Hardener :	Liquid, transparent	
Shelf life	24 months from date of production if stored properly in original, un-opened and undamaged sealed packaging		
Storage conditions	Store in dry conditions at temperatures between +10 °C and +30 °C.		
Density	At +23°C		
	Part A :	~1.6 kg/L	(DIN EN ISO 2811-1)
	Part B :	~1.0 kg/L	
	Mixed Resin :	~1.4 kg/L	
Solid content	~100 % (by volume) / ~100 % (by weight)		

TECHNICAL INFORMATION

Shore D Hardness	7 days (at +23 °C)	~76	(DIN 53 505)
Compressive Strength	28 days (at +23 °C)	~60 N/mm² (resin)	(EN 196-1)
Tensile Strength in Flexure	28 days (at +23 °C)	~30 N/mm² (resin)	(EN 196-1)
Tensile Adhesion Strength	> 1.5 N/mm² (failure in concrete)		(ISO 4624)
Chemical Resistance	Resistant to many chemicals. Please ask for a detailed chemical resistance table.		

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.

SYSTEMS

Systems

Primer:

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

Levelling mortar fine (surface roughness < 1 mm):

Primer:	1-2 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:	1-2 xSikafloor®-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 xSikafloor®-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:	1-2 xSikafloor®-161 HC
Bonding bridge:	1 xSikafloor®-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 INFORMATION

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

Consumption

Coating System	Product	Consumption
Priming	Sikafloor®-161 HC	0.35 - 0.55 kg/m²
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	1.6 kg/m²/mm
Levelling mortar medium (surface roughness up to 2 mm)	1 pbw Sikafloor®-161 HC + 1 - 1.2 pbw quartz sand (0.1 - 0.3 mm) + 0.015 pbw Extender T	1.8 kg/m²/mm
Bonding bridge	Sikafloor®-161 HC	0.3 - 0.5 kg/m²
Epoxy screed (15 - 20 mm layer thickness) / Repair Mortar	1 pbw Sikafloor®-161 HC + 8 pbw quartz sand	2.2 kg/m²/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

+8 °C min / +35 °C

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

Substrate Moisture Content

< 4 % pbw moisture content.
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 min
+20°C	~25 min
+30°C	~15 min

Curing Time

Waiting Time:
Before applying solvent free products on Sikafloor®-161 HC allow:

Substrate Temperature	Minimum	Maximum
+10 °C	24 h	4 d
+20 °C	12 h	2 d
+30 °C	8 h	24 h

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

Substrate Temperature	Minimum	Maximum
+10 °C	36 h	6 d
+20 °C	24 h	4 d
+30 °C	16 h	2 d

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

Applied Product Ready for Use

Substrate Temperature	Foot Traffic	Light Traffic	Full Cure
+10 °C	~24 h	~6 d	~10 d
+20 °C	~12 h	~4 d	~7 d
+30 °C	~8 h	~2 d	~5 d

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

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 must be clean, dry and free of all contaminants such as dirt, oil, grease, coatings and surface treatments, etc.
- Concrete substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and achieve an open textured surface.
- 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.
- 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.
- 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 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 minimize 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.

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 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. Preferred application is by using a squeegee and then back-rolling crosswise.

Epoxy screed / repair mortar:
Apply the mortar screed evenly on the still “tacky” bonding bridge, using leveling 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 / cured material can only be mechanically removed.

IMPORTANT CONSIDERATIONS

- Prior to application, measure and confirm Substrate Moisture Content, Ambient Relative, Humidity, Ambient and Surface Temperature and Dew Point. During installation, confirm and record above values at least once every 3 hours, or more frequently whenever conditions change (e.g. Ambient Temperature rise/fall, Relative Humidity increase/decrease, etc.).
- **Substrate Moisture Content:** Moisture content of concrete substrate must be ≤ 4% by mass (pbw – part by weight) as measured with a Tramex® CME/CMExpert type concrete moisture meter on mechanically prepared surface according to this product data sheet (preparation to CSP-3 to CSP-4 as per ICRI guidelines). Do not apply to concrete substrate with moisture levels > 4% mass (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter. If moisture content of concrete substrate is > 4% by mass (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter, use Sikafloor 81 EpoCem.
- **Material Temperature:** Precondition material for at least 24 hours between 18° to 24°C
- **Ambient Temperature:** Minimum/Maximum 8˚/35˚C
- **Substrate Temperature:** Minimum/Maximum 8˚/35˚C. Substrate temperature must be at least 3˚C above measured Dew Point. Mixing and Application attempted at Material, Ambient and/or Substrate Temperature conditions less than 18˚C will result in a decrease in product workability, slower cure rates and may occur of surface blushing.
- **Ambient Relative Humidity:** Maximum ambient humidity 85% (during application and curing)
- **Dew Point:** Beware of condensation! The substrate must be at least 3˚C above the Dew Point to reduce

the risk of condensation, which may lead to adhesion failure or “blushing” on the floor finish. Be aware that the substrate temperature may be lower than the ambient temperature.

- **Mixing:** Do not hand mix Sikafloor materials. Mechanically mix only. Do not thin this product. Addition of thinners (e.g. water, solvent, etc.) will slow cure and reduce ultimate properties of this product. Use of thinners will void any applicable Sika warranty. Improper mixing procedure or incorrect mixing ratio may result in moisture sensitivity, whitening, slow cure, soft spots, and other defects.
- **Application:** If used as a primer apply material to the prepared substrate using a squeegee and back roll to provide uniform coverage. Ensure that the substrate is pore-free and pinhole free and provides uniform and complete coverage over the entire substrate. If necessary, apply an additional coat to ensure the substrate is pore-free and pinhole-free and provides uniform and complete coverage over the entire substrate.
- Do not apply while ambient and substrate temperatures are rising, as pinholes may occur. Ensure there is no vapor drive at the time of application. Refer to ASTM D4263, may be used for a visual indication of vapor drive.
- Freshly applied material should be protected from dampness, condensation and water for at least 72 hrs. Will discolor over time when exposed to sunlight (UV) and under certain artificial lighting conditions. Use of clear UV resistant top coat may not prevent discoloration of underlying coatings.
- Do not apply Sikafloor to concrete substrate containing aggregates susceptible to ASR (Alkali Silica Reaction) due to risk of natural alkali redistribution below the Sikafloor product after application. If concrete substrate has or is suspected to have ASR (Alkali Silica Reaction) present, do not proceed. Consult with design professional prior to use.
- Any aggregate used with Sikafloor systems must be non-reactive and oven-dried. 6
- This product is not designed for negative side waterproofing.
- Typically not recommended for exterior slabs on grade where freeze/thaw conditions may exist.
- Use of unvented heaters and certain heat sources may result in defects (e.g. blushing, whitening, debonding, etc.).
- Beware of air flow and changes in air flow. Introduction of dust, debris, and particles, etc. may result in surface imperfections and other defects.
- For professional use only by experienced applicators.

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 declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

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.

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