Construction

Sikafloor®-280

3-part epoxy mortar

Product Description

Sikafloor®-280 is a three part, solvent free epoxy mortar, consisting of an epoxy binder and quartz sand with a maximum grain size of 1.2 mm. All components are prebatched in the correct mixing ratio.

Uses

- Epoxy screeds with a layer thickness of 2 - 10 mm
- For heavy mechanical wear (e.g. metal industry, print shops, loading ramps etc.)
- Repair mortar for floors and civil structures (e.g. bridges etc.)
- Embedding of balustrades and nosings etc.

Characteristics / Advantages

- Very high abrasion resistance
- Very high impact resistance
- High compressive and flexural strength
- High bond strength
- Solvent free
- Supplied in prebatched units
- Efficient and easy application

Tests

Approval / Standards

Suitable as a repair material for concrete roads acc. German standard MEB-3. Report No. P 1658, Polymer Institut, Germany.

Product Data

Form

Appearance / Colours

Resin - part A:	transparent, liquid
Hardener - part B:	brownish, liquid
Quartz sand - part C:	grey, powder

RAL 7032

Packaging

Part A:	1.875 kg containers
Part B:	0.625 kg containers
Part A+B:	2.5 kg unipacks
Part C:	25 kg bag
Part A+B+C:	27.5 kg ready to mix units

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: ~ 1.10 kg/l Part B: ~ 1.02 kg/l Mixed mortar: ~ 2.2 kg/l All Density values at +23 °C.	(DIN EN ISO 2811-1)
Solid Content	Resin: ~ 100% (by volume) / ~ 100% (by weight)	

Mechanical / Physical Properties

Compressive Strength	~ 80 N/mm² (7 days / +23 °C)	(EN 196-1)
Flexural Strength	~ 40 N/mm² (7 days / +23 °C / 50% r.h.)	(EN 196-1)
Bond Strength	> 1.5 N/mm^2 (failure in concrete)	(EN 4624)

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 (i.e. during steam cleaning etc.).

*No simultaneous chemical and mechanical exposure.

System Information

Systems Structure

Mortar Screed (2 - 10 mm layer thickness) / Repair Mortar:
Primer*: 1 x Sikafloor®-156
Bonding bridge: 1 x Sikafloor®-156
Screed: 1 x Sikafloor®-280

Coated mortar Screed (2 - 10 mm layer thickness) recommended for chemical exposure:
Primer*: 1 x Sikafloor®-156
Bonding bridge: 1 x Sikafloor®-156
Screed: 1 x Sikafloor®-280
Impregnation: 1x Sikafloor®-156 + Extender T
Coating: e.g. Sikafloor®-261 / -381 N / -390

* only necessary for strongly absorbent substrates.

Application Details

Consumption / Dosage

Coating System	Product	Consumption
Primer	Sikafloor®-156	0.3 - 0.5 kg/m²
Bonding bridge	Sikafloor®-156	0.3 - 0.5 kg/m²
Mortar Screed (2 - 10 mm layer thickness)	Sikafloor®-280	2.2 kg/m²/mm
Impregnation	1 pbw Sikafloor®-156 + 0.015 pbw Extender T	0.3 - 0.8 kg/m²
Coating	e.g. Sikafloor®-261 / -381 N / -390	Refer to product data sheet

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

Substrate Quality	Concrete substrates must be sound and of sufficient compressive strength (minimum 25 N/mm^2) with a minimum pull off strength of 1.5 N/mm^2. 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	< 4 % pbw moisture content. 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 mortar must be at least 3ºC above the dew point to reduce the risk of condensation or blooming on the mortar finish.

Application Instructions

Mixing	Part A : part B : part C= 7.5 : 2.5 : 100 (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 2 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. Over mixing must be avoided to minimise air entrapment.
Mixing Tools	Sikafloor®-280 (part A + B) must be thoroughly mixed using a low speed electric stirrer (300 - 400 rpm) or other suitable equipment. For Sikafloor®-280 (part A + B + C) mortars use a forced action mixer of rotating pan, paddle or tough type.

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.

For strongly absorbent substrates apply a primer coat. The primer has to be cured tack free before the bonding bridge is applied.

Primer:
Make sure that a continuous, pore free film covers the substrate.
Apply Sikafloor®-156 by brush, roller or squeegee.

Bonding bridge / impregnation:
Make sure that a continuous, pore free film covers the substrate.
Apply Sikafloor®-156 by brush, roller or squeegee.

Mortar screed:
Apply the mortar screed evenly on the tacky bonding bridge, using levelling boards and guide rails as necessary. After a short waiting time compact and finish the mortar with a trowel or Teflon coated power float (usually 20 - 90 rpm). Power floats can only be used on mortar layers > 8 mm.

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

Temperatures	Time
+10 °C	~ 60 minutes
+20 °C	~ 40 minutes
+30 °C	~ 25 minutes

Waiting Time / Overcoating

Before applying Sikafloor®-156 on Sikafloor®-280 allow:

Substrate temperature	Minimum	Maximum
+10 °C	24 hours	4 days
+20 °C	14 hours	2 days
+30 °C	8 hours	1 day

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

Notes on Application / Limitations

Do not apply Sikafloor®-280 on substrates with rising moisture.

Freshly applied Sikafloor®-280 should be protected from damp, condensation and water for at least 24 hours.

Avoid puddles on the surface with the primer.

Sikafloor®-280 mortar screed is not suitable for frequent or permanent contact with water unless sealed.

For exact colour matching, ensure the quartz sand in each area has the same colour (sand is a natural product and colour differences can occur).

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_2 and H_2O 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	~ 5 days	~ 10 days
+20 °C	~ 14 hours	~ 3 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 should 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.

Construction

CE Labelling

The harmonized European Standard EN 13 813 „Screed material and floor screeds - Screed materials - Properties and requirements“ specifies requirements for screed materials for use in floor construction internally.

Structural screeds or coatings, i.e. those that contribute to the load bearing capacity of the structure, are excluded from this standard.

Resin floor systems as well as cementitious screeds fall under this specification. They have to be CE-labelled as per Annex ZA. 3, Table ZA.1.5 and 3.3 and fulfil the requirements of the given mandate of the Construction Products Directive (89/106):

CE	
Sika Limited Watchmead Welwyn Garden City Hertfordshire AL7 1BQ United Kingdom	
04 [1)]	
EN 13813 SR-B1,5-AR1-IR 4	
Resin screed/coating for indoors in buildings (systems as per Product Data Sheet)	
Reaction to fire:	E_{fl} [2)]
Release of corrosive substances (**S**ynthetic **R**esin Screed):	SR
Water permeability:	NPD [3)]
Abrasion **R**esistance:	AR1 [4)]
Bond strength:	B 1,5
Impact **R**esistance:	IR 4
Sound insulation:	NPD
Sound absorption:	NPD
Thermal resistance:	NPD
Chemical resistance:	NPD

[1)] Last two digits of the year in which the marking was affixed.

[2)] In Germany, DIN 4102 still applies. Passed class B2.

[3)] No performance determined.

[4)] Not broadcast with sand.

EU Regulation 2004/42

VOC - Decopaint Directive

According to the EU-Directive 2004/42, the maximum allowed content of VOC (Product category IIA / **j** type **sb**) is 550 / 500 g/l (Limits 2007 / 2010) for the ready to use product.

The maximum content of **Sikafloor®-280 (Binder)** is < 500 g/l VOC for the ready to use product.

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ISO 14001 ISO 9001