Only to be applied by a Sika Approved Contractor

Construction

Sikafloor®-159

2-part fast curing epoxy primer and binder for levelling mortars

Positioning

Description

Sikafloor®-159 is a two part, fast curing, low viscosity, epoxy resin binder.

"Total solid epoxy composition acc. to the test method Deutsche Bauchemie e.V. (German Association for construction chemicals)"

Uses

- For priming concrete substrates, cementitious screeds and epoxy mortars
- For normal to strongly absorbent surfaces
- Primer for all Sika epoxy and polyurethane flooring systems
- Binder for levelling mortars
- For internal and external use

Characteristics / Advantages

- Very fast curing
- Application even at low temperatures (minimum +5°C)
- Short waiting times
- Low viscosity
- Good penetration ability
- High bond strength
- Easy application

Product Data

Appearance / Colours

Resin - part A:	Transparent, liquid
Hardener - part B:	Brownish, liquid

Packaging

Part A:	16kg
Part B:	9kg
Part A+B:	25kg ready to mix unit

Storage & Shelf-Life

Twenty Four (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:	~ 1.10kg/l	
Part B:	~ 1.02kg/l	
Mixed Resin:	~ 1.1kg/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: ~ 50N/mm^2 (28 days / +23°C / 50% r.h.)		(EN 196-1)
Flexural Strength	Resin: ~ 40N/mm^2 (28 days / +23°C / 50% r.h.)		(EN 196-1)
Bond Strength	> 1.5N/mm^2	(failure in concrete)	(EN 4624)
Shore D Hardness	75	(7 days / +23°C / 50% r.h.)	(DIN 53505)

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

USGBC

Sikafloor®-159 conforms to the requirements of LEED

LEED Rating

EQ Credit 4.2: Low-Emitting Materials: Paints & Coatings

SCAQMD Method 304-91 VOC Content < 100g/l

System Information

System Structure

Primer:
Low/medium porosity concrete: 1 x Sikafloor®-159
High porosity concrete: 2 x Sikafloor®-159

Levelling mortar (surface roughness up to 2 mm:
Primer: 1 x Sikafloor®-159
Levelling mortar: 1 x Sikafloor®-159 + quartz sand (0.1 - 0.3mm) +
Extender T (mixing ratio depends on layer thickness, see Consumption / Dosage)

Application Details

Consumption / Dosage

Coating System	Product	Consumption
Primer	Sikafloor®-159	1-2 x 0.3 - 0.5kg/m²
Levelling mortar (surface roughness < 1mm)	1 pbw Sikafloor®-159 + 0.5pbw quartz sand (0.1 - 0.3mm) + 0.015pbw Extender T	1.4kg/m²/mm
Levelling mortar (surface roughness up to 2mm)	1pbw Sikafloor®-159 + 1pbw quartz sand (0.1 - 0.3mm) + 0.015pbw Extender T	1.6kg/m²/mm

These figures are theoretical and do not allow for any additional material 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 25N/mm^2) with a minimum pull off strength of 1.5N/mm^2.

The substrate must be clean, dry and free of all contaminants such as dirt, oil, grease, coatings and surface treatments, etc.

On critical substrates, e.g a strong absorbent cementitious surface, the application of a trial area is highly recommended, in order to ensure a porefree surface, after priming.

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
+5°C min. / +30°C max.

Ambient Temperature
+5°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 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.

Application Instructions

Mixing
Part A : part B = 64 : 36 (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®-159 must be thoroughly mixed using a low speed electric stirrer (300 - 400rpm) 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 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®-159 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.

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
+5°C	~ 25 minutes
+10°C	~ 20 minutes
+20°C	~ 10 minutes
+30°C	~ 5 minutes

Waiting Time / Overcoating
Before applying solvent free products on Sikafloor®-159 allow:

Substrate temperature	Minimum	Maximum
+5°C	24 hours	3 days
+10°C	12 hours	2 days
+20°C	5 hours	1 day
+30°C	3 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®-159 on substrates with rising moisture.

Freshly applied Sikafloor®-159 should be protected from damp, condensation and water for at least 24 hours.

Avoid puddles on the surface with the primer.

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 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	Full cure
+5°C	~ 24 hours	~ 6 days
+10°C	~ 12 hours	~ 3 days
+20°C	~ 5 hours	~ 2 days
+30°C	~ 3 hours	~ 1 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.

Safety Instructions

Protective Measures

- Wear protective gloves and eye protection during work
- A full Material Safety Data Sheet is available from Sika on request

Important Notes

- Residues of material must be removed according to local regulations. Fully cured material can be disposed of as household waste under agreement with the responsible local authorities.
- Detailed health and safety information as well as detailed precautionary measures e.g. physical, toxicological and ecological data can be obtained from the safety data sheet.

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.

The resin floor systems as well as 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		CE
Sika (NZ) Ltd 85-91 Patiki Road Avondale, Auckland New Zealand		
08 [1]		08 [1]
EN 13813 SR-B1,5-AR1-IR 4		EN 13 813 SR-B1,5
Resin screed/coating for indoors in buildings (systems as per Product Data Sheet)		Primer (systems as per Product Data Sheet)
Reaction to fire:	E_{fl} [2]	NPD [3]
Release of corrosive substances (**S**ynthetic **R**esin Screed):	SR	SR
Water permeability:	NPD [3]	NPD
Abrasion **R**esistance:	AR1 [4]	NPD
Bond strength	B 1,5	B 1,5
Impact **R**esistance:	IR 4	NPD
Sound insulation:	NPD	NPD
Sound absorption:	NPD	NPD
Thermal resistance:	NPD	NPD
Chemical resistance:	NPD	NPD

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

[2] Min. classification, please refer to the individual test certificate.

[3] No performance determined.

[4] Not broadcast with sand.

CE Labelling

The harmonized European Standard EN 1504-2 'Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of conformity – Part 2 : Surface protection systems for concrete' gives specifications for products and systems used as methods for the various principles presented under EN 1504-9.

Products which fall under this specification have to be CE-labelled as per Annex ZA. 1, Tables ZA.1a to ZA 1g according to the scope and relevant clauses there indicated, and fulfil the requirements of the given mandate of the Construction Products Directive (89/106):

Here below indicated are the minimum performance requirements set by the standard. For the specific performance results of the product to the particular tests, please see the actual values above in the PDS.

CE	
0921	
Sika (NZ) Ltd 85-91 Patiki Road Avondale, Auckland New Zealand	
08 [1)]	
0921–CPD–2017	
EN 1504-2	
Surface Protection Product Coating [2)]	
Abrasion resistance (Taber test):	< 3000mg
Permeability to CO_2:	S_D > 50m
Permeability to water vapour:	Class III
Capillary absorption and permeability to water:	$w < 0.1\ kg/m^2 \times h^{0,5}$
Resistance to severe chemical attack: [3)]	Class II
Impact resistance:	Class II
Adhesion strength by pull-off test:	≥ 2.0 N/mm²
Fire Classification: [4)]	E_{fl}

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

[2)] Tested as a part of a system build-up with Sikafloor®-263 SL.

[3)] Please refer to the Sikafloor® Chemical Resistance Chart.

[4)] Min. classification, please refer to the individual test certificate.

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 500g/l (Limit 2010) for the ready to use product.

The maximum content of **Sikafloor®-159** is < 500g/l VOC for the ready to use product.

Legal Notes

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