Construction

Sikagard®-63 N

2-part Epoxy Protective Coating

Product Description

Sikagard®-63 N is a solvent free, two part epoxy resin coating.

Uses

- Abrasion resistant universal coating material designed for normal to highly aggressive chemical environments
- For use on concrete, cementitious mortars and rendering, epoxy mortars (including Sika®-EpoCem), steel and aluminium
- For protective lining of storage tanks, silos and bund areas
- As an anti-corrosion coating in food and beverage processing plants, sewage works, agricultural, chemical and pharmaceutical plants, bottling plants etc.
- Also used as part of glass fibre reinforced self supporting linings with crack bridging properties for bund areas and storage tanks

Characteristics / Advantages

- Very good chemical and mechanical resistance
- Liquid proof (according to the products chemical resistance table)
- Easy application
- Solvent free

Product Data

Form

Appearance / Colours

Resin - Part A: coloured, liquid
Hardener - Part B: transparent, liquid
Pebble grey (~ RAL 7032). Additional colour shades on request.
Under direct sun radiation there may be some discolouration and colour deviation; this has no influence to the function and performance of the coating.

Packaging

Part A: 8.7 kg containers
Part B: 1.3 kg, containers
Part A+B: 10 kg ready to mix units

Storage

Storage Conditions/ Shelf-Life

12 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 (@ 23°C)	Mixed resin: ~ 1.35 kg/lt	(DIN EN ISO 2811-1)
Solid Content	~ 100% (by volume), ~ 100 % (by weight)	
Thermal Expansion Coefficient	~ 75 x 10^{-6} per °K (temperature range: -10°C to +40°C)	
Water Vapour Diffusion Coefficient (μH_2O)	μH_2O = ~ 100 000	

Mechanical / Physical Properties

Bond Strength	Substrate:		
	Concrete:	> 1.5 N/mm²	(failure in concrete) (ISO 4624)
	Steel (SA 2.5):	~ 24 N/mm²	
	Aluminium:	~ 16 N/mm²	

Resistance

Chemical Resistance

Test group*	T	24 h	3 d	7 d	42 d	90 d	6 m	12 m
PG 1 (Petrol)	20°C	A	A	A	D	D	D	D
PG 4 (all hydrocarbons w/o Benzol, unused engine and lubricating oils, jet fuels, heating fuel, Diesel; incl. PG 2, 3)	40°C	A	A	A	A	D	D	D
PG 4a (Benzol)	20°C	A	A	A	A	A	A	D
PG 5 (Alcohols with max. 48% Methanol, Glycol Ether)	20°C	A	A	A	D	D	D	D
PG 5a (all Alcohols and Glycol Ether)	20°C	A	A	A	C			
PG 6a (Aliphatic and aromatic halogen hydrocarbons)	20°C	C						
PG 7 (Esters and Ketones)	20°C	A	A	A	D	D	D	D
PG 8 (aqueous solutions of Aliphatic Aldehyds up to 40%)	20°C	A	A	A	D	D	D	D
PG 8a (Aliphatic Aldehyds including PG 8)	20°C	A	A	D	C			
PG 10 (Mineral acids up to 20%)	20°C	A	A	A	D	D	D	D
PG 11 (Inorganic alkalis)	20°C	A	A	A	A	A	A	A
PG 13 (Amines and aqueous solutions of their salts)	20°C	A	A	A	A	D	D	D
PG 14 (aqueous solution of organic Tensides)	20°C	A	A	A	D	D	D	D
PG 14 (aqueous solution of organic Tensides)	40°C	A	A	A	D	D	D	D
PG 15 (cyclic and acyclic Ethers)	20°C	A	A	A	C			

Test medium	T	24 h	3 d	7 d	42 d	90 d	6 m	12 m
Ethanol 96%	20°C	D	D	D	C			
Ethanol 96%	40°C	D	D	D	C			
Acetic acid 20%	20°C	A	A	A	C			
Acetic acid 20%	40°C	A	A	C				
Ammonia 10%	40°C	A	A	A	C			
Water	20°C	A	A	A	A	A	A	A
Water	40°C	A	A	A	A	D	D	D
Water	60°C	A	A	A	D	D	D	C
$FeCl_3$ –Lsg 35%	40°C	A	A	A	D	D	D	D
Heating fuel	60°C	A	A	A	A	A	A	A
Skydrol 500P	40°C	A	A	A	A	A	A	A
Latic acid 20%	40°C	A	A	A	C			
H_2SO_3 –Lsg 5%	40°C	A	A	A	C			
NaOH 50%	20°C	A	A	A	A	A	A	A
NaOH 50%	40°C	A	A	A	A	A	A	D
Phosphoric acid 40%	20°C	A	A	A	D	C		
Phosphoric acid 40%	40°C	A	A	A	C			
Nitric acid 20%	20°C	A	A	A	D	C		
Nitric acid 20%	40°C	A	A	A	C			
Hydrochloric acid 37%	20°C	A	A	A	D	C		
Hydrochloric acid 37%	40°C	A	A	A	C			
Sulphuric acid 50%	20°C	A	A	A	D	D	D	D
Sulphuric acid 50%	40°C	A	A	A	D	D	D	D
Sulphuric acid 80%	20°C	A	A	A	D	D	D	D
Trichloroethylene	20°C	A	A	A	D	D	D	D
H_2O_2 5%	20°C	A	A	A	A	A	A	D
Tartaric acid 20%	20°C	A	A	A	D	D	D	D
Citric acid 20%	40°C	A	A	A	D	D	D	D
NaOCl 16,7g/L Cl_2	20°C	A	A	A	D	D	D	D
NaCl saturated solution	20°C	A	A	A	A	A	A	A
NaCl saturated solution	40°C	A	A	A	A	A	D	D

*acc. EN 13529

A = resistant C = not resistant
D = resistant but with discolouration and/or loss of gloss

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.

System Information

System Structure

Roller coating:
Primer*: 1 x Sikafloor®-156
Coating: 2 - 3 x **Sikagard®-63 N**

Lamination (1.5 - 2.0 mm):
Primer*: 1x Sikafloor®-156
1st lamination layer: 1 x **Sikagard®-63 N** + glass fibre fabric
2nd lamination layer: 1 x **Sikagard®-63 N** + glass fibre fabric
Seal coat: 1 x **Sikagard®-63 N**
*optional, only recommended for use on strongly absorbent surfaces.

Application Details

Consumption / Dosage

Coating System	Product	Consumption
Primer	Sikafloor®-156	0.3 - 0.5 kg/m²
Roller coating	**Sikagard®-63 N**	0.3-1.0 kg/m² per coat, dependent on substrate condition and required coating thickness
Lamination	**Sikagard®-63 N** Glass fiber fabric	1st layer: 0.7 kg/m² 2nd layer: 0.6 kg/m² Seal coat: 0.4 kg/m² ~0.3 kg/m² per layer

Notes: For a theoretical dry film thickness of 100 microns (0.1 mm) approx. 0.15 kg/m² must be applied.
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

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.
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 a profiled open textured surface.
Weak concrete must be removed and surface defects such as blowholes and voids must be fully exposed.
Repairs to substrate, filling of blowholes/voids and surface levelling can 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 up in order to achieve an
even surface.
High spots must be removed e.g. by 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 Humidity	≤ 4% pbw moisture content. Test method: Sika®-Tramex meter or CM - measurement. No rising moisture according to ASTM (Polyethylene-sheet).
Relative Air Humidity	80% r.h. max.
Dew Point	Beware of condensation! The substrate and uncured coating must be at least 3°C above dew point to reduce the risk of condensation or blooming on the coating surface.

Application Instructions

Mixing	Part A : part B = 87 : 13 (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. To ensure thorough mixing pour the material into another container and mix again to achieve a consistent mix. Over mixing must be avoided to minimize air entrapment. After mixing allow the material to stand for 3 minutes.
Mixing Tools	Sikagard®-63 N must be mechanically mixed using an electric stirrer (300 - 400 rpm) or other suitable equipment.
Application Method / Tools	Prior to application, confirm substrate moisture content, r.h. and dew point. If > 4% moisture content, Sikafloor® EpoCem® Mortars or Sikagard®-720 EpoCem should be applied as a T.M.B. (temporary moisture barrier) system. *Coating:* **Sikagard®-63 N**, can be applied with a stiff brush or a short piled, solvent resistant roller. *Lamination:* The fabric should be embedded in the 'wet' **Sikagard®-63 N** using a special profiled roller.
Cleaning of Tools	Clean all tools and application equipment with Thinner C immediately after use. Hardened / cured material can only be removed mechanically.

Potlife

Temperatures	Time
+10°C	~ 30 minutes
+20°C	~ 20 minutes
+30°C	~ 10 minutes

Waiting Time / Overcoatability

Before applying **Sikagard®-63 N** on Sikafloor®-156:

Substrate Temperature	Minimum	Maximum
+10°C	24 hours	4 days
+20°C	12 hours	2 days
+30°C	6 hours	1 day

Before applying **Sikagard®-63 N** on **Sikagard®-63 N**

Substrate Temperature	Minimum	Maximum
+10°C	9 hours	3 days
+20°C	5 hours	2 days
+30°C	4 hours	1 day

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

Notes on Application / Limitations

Suitable for hot and tropical climates
Do not apply **Sikagard®-63 N** on substrates in which significant vapor pressure may occur.
Freshly applied **Sikagard®-63 N** must be protected from damp, condensation and water for at least 24 hours.
Avoid puddles on the surface with the primer.
Sag resistance: > 300 µm (wet film thickness).
Tools
Recommended Supplier of Tools:
PPW-Polyplan-Werkzeuge GmbH, Phone: +49 40/5597260, www.polyplan.com.
The incorrect assessment and treatment of cracks may lead to a reduced service life and reflective cracking.
For exact colour matching, ensure **Sikagard®-63 N** is applied from the same control batch numbers.

Curing Details

Applied Product ready for use

Temperature	Foot Traffic	Full cure
+10°C	~ 24 hours	~ 15 days
+20°C	~ 18 hours	~ 9 days
+30°C	~ 12 hours	~ 7 days

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

Notes

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.

Construction

Local Restriction	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 product uses.
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.

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