

# Sikagard®-63 N

## 2-part epoxy protective coating

### Product Description

Sikagard®-63 N is a total solid, 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



|   |  |                     |
|---|--|---------------------|
| <b>Density</b>  | Mixed resin: ~ 1.35 kg/l<br>Density value at +23°C.                | (DIN EN ISO 2811-1) |
| <b>Solid Content</b>  | ~ 100% (by volume), ~ 100% (by weight)                             |                     |
| <b>Thermal Expansion Coefficient</b>                        | ~ 75 x 10 <sup>-6</sup> per °K (temperature range: -10°C to +40°C) |                     |
| <b>Water Vapour Diffusion Coefficient (μH<sub>2</sub>O)</b> | μ H <sub>2</sub> O = ~ 100.000                                     |                     |

### Mechanical / Physical Properties

|                      |                   |                         |  |
|----------------------|-------------------|-------------------------|--|
| <b>Bond Strength</b> | <i>Substrate:</i> |                         |  |
|                      | Concrete:         | > 1.5 N/mm <sup>2</sup> | (failure in concrete) (DIN EN 13892-8) |
|                      | Steel (SA 2.5):   | ~ 24 N/mm <sup>2</sup>  | (DIN EN 24624)                         |
|                      | Aluminium:        | ~ 16 N/mm <sup>2</sup>  | (DIN EN 24624)                         |

### Resistance

#### Chemical Resistance

| Test group  | T    | 24 h | 3 d | 7 d | 42 d | 90 d | 6 m | 12 m |
|---|------|------|-----|-----|------|------|-----|------|
| <b>PG 1</b> (Petrol)  | 20°C | A    | A   | A   | D    | D    | D   | D    |
| <b>PG 4</b> (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    |
| <b>PG 4a</b> (Benzol)   | 20°C | A    | A   | A   | A    | A    | A   | D    |
| <b>PG 5</b> (Alcohols with max. 48% Methanol, Glycol Ether)   | 20°C | A    | A   | A   | D    | D    | D   | D    |
| <b>PG 5a</b> (all Alcohols and Glycol Ether)  | 20°C | A    | A   | A   | C    |      |     |      |
| <b>PG 6</b> (aliphatic and aromatic halogen hydrocarbons ≥ C2)  | 20°C | A    | A   | A   | D    |      |     |      |
| <b>PG 6a</b> (Aliphatic and aromatic halogen hydrocarbons)  | 20°C | C    |     |     |      |      |     |      |
| <b>PG 7</b> (Esters and Ketones)  | 20°C | A    | A   | D   | D    | D    | D   | D    |
| <b>PG 8</b> (aqueous solutions of Aliphatic Aldehyds up to 40%)   | 20°C | A    | A   | A   | D    | D    | D   | D    |
| <b>PG 8a</b> (Aliphatic Aldehyds including PG 8)  | 20°C | A    | A   | D   | C    |      |     |      |
| <b>PG 9</b> (aqueous solutions of organic acids (carbon acids) ≤ 10% or their salts (aqueous solution))                       | 20°C | A    | A   | C   |      |      |     |      |
| <b>PG 9a</b> (organic acids (carbon acids, except formic acid) and the respective salts (in aqueous solutions))               | 20°C | A    | C   |     |      |      |     |      |
| <b>PG 10</b> (Mineral acids up to 20%)  | 20°C | D    | D   | D   | D    | D    | D   | D    |
| <b>PG 11</b> (Inorganic alkalis)  | 20°C | A    | A   | A   | A    | A    | A   | A    |
| <b>PG 13</b> (Amines and aqueous solutions of their salts)  | 20°C | A    | A   | D   | D    | D    | D   | D    |
| <b>PG 14</b> (aqueous solution of organic Tensides)   | 20°C | A    | A   | A   | D    | D    | D   | D    |
| <b>PG 14</b> (aqueous solution of organic Tensides)   | 40°C | A    | A   | A   | D    | D    | D   | D    |
| <b>PG 15</b> (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 |
|--|------|------|-----|-----|------|------|-----|------|
| Formic acid 10%                        | 20°C | A    | C   |     |      |      |     |      |
| Acetone                                | 20°C | A    | C   |     |      |      |     |      |
| 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 <sub>3</sub> -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    |
| Lactic acid 20%                        | 40°C | A    | A   | A   | C    |      |     |      |
| H <sub>2</sub> SO <sub>3</sub> -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 | D    | D   | D   | D    | D    | D   | D    |
| Sulphuric acid 80%                     | 20°C | D    | D   | D   | D    | D    | D   | D    |
| Trichloroethylene                      | 20°C | A    | A   | A   | D    | D    | D   | D    |
| H <sub>2</sub> O <sub>2</sub> 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 <sub>2</sub>          | 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  
1<sup>st</sup> lamination layer: 1 x Sikagard®-63 N + glass fibre fabric  
2<sup>nd</sup> 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/m <sup>2</sup>  |
| Roller coating | Sikagard®-63 N                           | 0.3 - 1.0 kg/m <sup>2</sup> per coat, dependent on substrate condition and required coating thickness  |
| Lamination     | Sikagard®-63 N<br><br>Glass fiber fabric | 1 <sup>st</sup> layer: 0.7 kg/m <sup>2</sup><br>2 <sup>nd</sup> layer: 0.6 kg/m <sup>2</sup><br>Seal coat: 0.4 kg/m <sup>2</sup><br><br>~0.3 kg/m <sup>2</sup> per layer |

Notes: For a theoretical dry film thickness of 100 microns (0.1 mm) approx. 0.15 kg/m<sup>2</sup> 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/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

|                                   |  |
|-----------------------------------|--|
| <b>Substrate Temperature</b>      | +10°C min. / +30 °C max.   |
| <b>Ambient Temperature</b>        | +10C min. / +30 °C max.  |
| <b>Substrate Moisture Content</b> | ≤ 4% pbw moisture content.<br>Test method: Sika®-Tramex meter, CM - measurement or Oven-dry-method.<br>No rising moisture according to ASTM (Polyethylene-sheet).            |
| <b>Relative Air Humidity</b>      | 80% r.h. max.  |
| <b>Dew Point</b>                  | Beware of condensation!<br><br>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

|                     |  |
|---------------------|--|
| <b>Mixing</b>       | Part A : part B = 87 : 13 (by weight)  |
| <b>Mixing Time</b>  | 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.<br><br>To ensure thorough mixing pour the material into another container and mix again to achieve a consistent mix.<br><br>Over mixing must be avoided to minimise air entrapment.<br><br>After mixing allow the material to stand for 3 minutes. |
| <b>Mixing Tools</b> | Sikagard®-63 N must be thoroughly mixed using a low speed 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 or by airless spray equipment

Depending on the type of application we recommend advice is sought from the spray equipment supplier on the type of equipment, tip and filter size, etc, specific for the spraying application. As a guide a tip orifice diameter between 19-23 thou should be considered.

*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 and/or cured material can only be removed mechanically.

## Potlife

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

**Waiting Time /  
Overcoating**

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**

Do not apply Sikagard®-63 N on substrates with rising moisture.

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).

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.

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 | 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.

**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 shall 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.

### EU Regulation 2004/42

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.

### VOC - Decopaint Directive

The maximum content of **Sikagard®-63 N** is < 500 g/l VOC for the ready to use product.



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