

# PRODUCT DATA SHEET

## Sikagard®-550 W Elastic

CRACK BRIDGING PROTECTIVE COATING FOR CONCRETE



### PRODUCT DESCRIPTION

Sikagard®-550 W Elastic is a one component, plasto-elastic coating based on UV-curing acrylic dispersion with excellent crack-bridging properties even at temperatures below 0 °C.

Sikagard®-550 W Elastic complies with the requirements of EN 1504-2 as protective coating.

### USES

Sikagard®-550 W Elastic is used for protection and enhancement of concrete structures (normal and lightweight concrete), especially exposed outdoor concrete surfaces with a risk of cracking.

Sikagard®-550 W Elastic is used with concrete repair works as an elastic protective coating on Sika® smoothing mortar (refer to relevant product / system data sheet), fibre cement and overcoating of existing soundly adhering coatings

- Suitable for protection against ingress (Principle 1, method 1.3 of EN 1504-9),

### CHARACTERISTICS / ADVANTAGES

- Crack-bridging even at low temperatures (-20°C)
- High diffusion resistance against CO<sub>2</sub> reducing the rate of carbonation
- Water vapour permeable
- Very good resistance against weathering and ageing
- Environmentally friendly (solvent free)
- Reduced tendency to dirt pick up and contamination
- The system is resistant to aggressive atmospheric influences

### APPROVALS / STANDARDS

Complies with the requirements for Class 0, as defined in paragraph A13(b) of approved document B 'fire safety' to the Building regulations dated 20.11.2012 Nr 323721 & 323722

EN 1504-2 performance testing, LPM Report A-33'882-2 dated July 09

The product is included in a compilation of tested products and systems as per OS 5a (OS DII) at the German Institute of Road Systems

Determination of dynamic crack bridging properties according to EN 1062-7, report P8690a dated 27/08/2014, Kiwa Polymer Institut GmbH

### PRODUCT INFORMATION

<b>Chemical Base</b>	Acrylate dispersion
<b>Packaging</b>	15 l oval plastic pail
<b>Appearance / Colour</b>	Thixotropic liquid available in almost every RAL colour shade.
<b>Shelf Life</b>	12 months from date of production if stored properly in undamaged and unopened original sealed packaging.
<b>Storage Conditions</b>	Store in cool and dry conditions. Protect from direct sunlight and frost.
<b>Density</b>	~ 1.39 kg/l (at +20°C)
<b>Solid content by weight</b>	~ 66.1%

Solid content by volume ~ 53.4%

## TECHNICAL INFORMATION

<b>Elongation at Break</b>	Elongation at break <ul style="list-style-type: none"><li>▪ at room temperature (not exposed to weathering): 120%</li><li>▪ at -20°C: 70%</li></ul>	
<b>Tensile Adhesion Strength</b>	2,9 (2,8) N/mm <sup>2</sup>	(EN 1542)
<b>Crack Bridging Ability</b>	Class A1 (-20°C) - 2 coats Class B2 (-15°C) - 3 coats	(EN 1062-7)
<b>Freeze Thaw De-icing Salt Resistance</b>	2,9 (2,1) N/mm <sup>2</sup>	(EN 13687 part 1 & part 2)
<b>Behaviour after Artificial Weathering</b>	Pass after 2000 hours	(EN 1062-11)
<b>Permeability to Water Vapour</b>	Dry film thickness	d = 230 µm (EN ISO 7783-1)
	Equivalent air layer thickness	SD, H <sub>2</sub> O = 0.35 m (EN ISO 7783-2)
	Diffusion coefficient H <sub>2</sub> O	µH <sub>2</sub> O = 1,5 x 10 <sup>3</sup>
	Requirements for breathability	≤ 5 m
<b>Capillary Absorption</b>	w = 0,02 kg/(m <sup>2</sup> h <sup>0.5</sup> )	(EN 1062-3)
<b>Permeability to CO<sub>2</sub></b>	Dry film thickness	d = 160 µm (EN 1062-6)
	Equivalent air layer thickness	SD, CO <sub>2</sub> = 51 m
	Diffusion coefficient CO <sub>2</sub>	µCO <sub>2</sub> = 3,1 x 10 <sup>5</sup>
	Requirements for protection	SD, CO <sub>2</sub> ≥ 50 m

## SYSTEM INFORMATION

System Structure	System	Product <sup>1)</sup>	Number of applications
	Priming <sup>2)</sup>	Sikagard®-552 W Aquaprimer	1
	Top coat <sup>3)</sup>	Sikagard®-550 W Elastic	2 – 3

<sup>1)</sup> Refer to the respective product data sheet for additional information.

<sup>2)</sup> For varied substrates (very dense or weak with tensile strength < 1 N/mm<sup>2</sup>) and at low temperature, use solvent containing primer Sikagard®-551 S Elastic Primer.

<sup>3)</sup> In case of an intensive yellow or red colour shade and/or a dark substrate, more than two coats might be required. A third coat is also required in order to achieve the required thickness for full durability (crack bridging, adhesion after thermal cycling, etc.)

## APPLICATION INFORMATION

Consumption	Product	Per coat
	Sikagard®-551 S Elastic Primer	~ 0.10 - 0.15 kg/m <sup>2</sup>
	Sikagard®-552 W Aquaprimer	~ 0.10 - 0.15 kg/m <sup>2</sup>
	Sikagard®-550 W Elastic	~ 0.25 - 0.35 kg/m <sup>2</sup>

**Layer Thickness** **Minimum** required dry film thickness to achieve the required characteristics (CO<sub>2</sub> equivalent air thickness of 50 m) ≈ 160 µm.  
*Minimum* required dry film thickness to achieve full durability characteristics (CO<sub>2</sub> diffusion, adhesion after thermal cycling and crack bridging) ≈ 340 µm.

**Ambient Air Temperature** +8°C min. / +35°C max.

<b>Relative Air Humidity</b>	< 80%												
<b>Dew Point</b>	Temperature must be at least 3°C above dew point.												
<b>Substrate Temperature</b>	+8°C min. / +35°C max.												
<b>Waiting Time / Overcoating</b>	<p>Waiting time between coats at +20°C substrate temperature:</p> <table border="1"> <thead> <tr> <th>Previous coating</th> <th>Waiting time</th> <th>Next coating</th> </tr> </thead> <tbody> <tr> <td>Sikagard®-552 W AquaPrimer</td> <td>5 hours min.</td> <td>Sikagard®-550 W Elastic</td> </tr> <tr> <td>Sikagard®-551 S Elastic Primer</td> <td>18 hours min.</td> <td>Sikagard®-550 W Elastic</td> </tr> <tr> <td>Sikagard®-550 W Elastic</td> <td>8 hours min.</td> <td>Sikagard®-550 W Elastic</td> </tr> </tbody> </table> <p>Note: When application is on existing coatings, the waiting time for both primers will increase by 100%.  Refresher coats of Sikagard®-550 W Elastic can be applied without priming if the existing coat has been thoroughly cleaned.</p>	Previous coating	Waiting time	Next coating	Sikagard®-552 W AquaPrimer	5 hours min.	Sikagard®-550 W Elastic	Sikagard®-551 S Elastic Primer	18 hours min.	Sikagard®-550 W Elastic	Sikagard®-550 W Elastic	8 hours min.	Sikagard®-550 W Elastic
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<b>Curing Treatment</b>	Sikagard®-550 W Elastic does not require any special curing but must be protected from rain for at least 4 hours at +20°C.												
<b>Applied Product Ready for Use</b>	Full cure: ~ 7 days at +20°C												

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY / PRE-TREATMENT

#### *Exposed concrete without existing coating:*

- The surface must be dry, sound and free from loose and friable particles.
- Suitable preparation methods are steam cleaning, high pressure water jetting or blastcleaning.
- New concrete must be at least 28 days old.
- If required, a levelling pore sealer (e.g. Sika® Mono-Top®-620, Sikagard®-720 EpoCem®, Sikagard®-545 W Elastofill, etc.) shall be applied – refer to the respective product data sheet. For cement based products, allow a curing time of at least 4 days before coating (except when the EpoCem is used, then coating can be applied within 24 hours).

#### *Exposed concrete with existing coating:*

- Existing coatings must be tested to confirm their adhesion to the substrate and their suitability - adhesion test average > 0.8 N/mm<sup>2</sup> with no single value below 0.5 N/mm<sup>2</sup>.
- For water based coating, use Sikagard-552 W AquaPrimer as primer.
- For solvent based coating, use Sikagard-551 S Elastic Primer as primer.
- If coating type is unknown, carry out adherence testing to determine which primer is most suitable – wait at least 2 weeks prior to conduct the adhesion test - an average value of 0.8 N/mm<sup>2</sup> is required with no single value below 0.5 N/mm<sup>2</sup>.

### APPLICATION

Apply Sikagard®-551 S Elastic Primer or Sikagard®-552 W AquaPrimer evenly onto the substrate. For use on very dense substrates up to 10% Sika Thinner C may be added to Sikagard®-551 S Elastic Primer. Sikagard®-550 W Elastic can be applied by brush, roller or airless spray.

### CLEANING OF TOOLS

Clean all tools and application equipment with clean water immediately after use. Hardened / cured material can only be removed mechanically. For Sikagard®-551 S Elastic Primer use Sika® Thinner C.

### LIMITATIONS

Do not apply when there is:

- Expected rain
- Relative humidity > 80%
- Temperature below +8°C and/or below dew point
- Concrete younger than 28 days

Application during cold temperatures below recommended application temperatures may reduce adhesion values.

Sikagard® 550W Elastic is not a chemical resistant coating

Dark colour shades (especially black, dark red and blue, etc.) may fade more rapidly than other lighter tone colours. A refreshing coat might be required at an earlier interval than usual.

Where colour fade may occur the protective properties of the coating will remain unaffected

## 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.

## 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.

### DIRECTIVE 2004/42/CE - LIMITATION OF EMISSIONS OF VOC

According to the EU-Directive 2004/42, the maximum allowed content of VOC (Product category IIA / c type wb) is 40 g/l (Limits 2010) for the ready to use product. The maximum content of Sikagard®-550 W Elastic is < 40 g/l VOC for the ready to use product.

## 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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