

Product Data Sheet
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Sikagard®-550 W Elastic



EN 1504-2

09

0921- BPR - 2046

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 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),
- Suitable for moisture control (Principle 2, method 2.2 of EN 1504-9)
- Suitable for increasing the resistivity (Principle 8, method 8.2 of EN 1504-9)

Characteristics / Advantages

- Crack-bridging even at low temperatures (-20°C)
- High diffusion resistance against CO₂ 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

Tests

Approval / Standards

Conforms to the requirements of EN 1504-2.

Test according to ZTV SIBOS-D II from the Polymer Institute dated 16.10.01 Nr. P2438

Test according to ZTV SIBOS-D II from the Polymer Institute dated 16.10.01 Nr. P2436

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

Product Data

Form

Appearance / Colours

Thixotropic liquid available in almost every colour shade.

Packaging

15 l oval plastic pail



Storage

Storage Conditions / Shelf-Life 24 months from date of production if stored properly in undamaged and unopened original sealed packaging in cool and dry conditions. Protect from direct sunlight and frost.

Technical Data

Chemical Base Acrylate dispersion

Density ~ 1.39 kg/l (at +20 °C)

Solid Volume ~ 53.4%

Solid Content ~ 66.1%

Layer Thickness Minimum required dry thickness to achieve the required characteristics (CO₂ equivalent air thickness of 50 m) = 200 microns.
Minimum required dry thickness to achieve full durability characteristics (CO₂ diffusion, adhesion after thermal cycling and crack bridging) = 480 microns.
Maximum required dry thickness not to go beyond the H₂O equivalent air thickness of 4 m = 1635 microns.

Carbon Dioxide Diffusion Coefficient (μCO₂)

Dry film thickness	d = 337 μm
Equivalent air layer thickness	S _{D, CO₂} = 84 m
Diffusion coefficient CO ₂	μCO ₂ = 2.5 x 10 ⁵
Requirements for protection	≥ 50 m

Water Vapour Diffusion Coefficient (μH₂O)

Dry film thickness	d = 319 μm
Equivalent air layer thickness	S _{D, H₂O} = 0.78 m
Diffusion coefficient H ₂ O	μH ₂ O = 2.5 x 10 ³
Requirements for breathability	≤ 4 m

Mechanical / Physical Properties

Elongation at Tear Elongation at break at room temperature (not exposed to weathering): 120%
Elongation at break at -20 °C: 70%

Crack-Bridging Capacity Class I_T according to ZTV SIB 90-TL/TP OS

System Information

System Structure

System	Product ⁽¹⁾	Number of applications
Priming ⁽²⁾	Sikagard [®] -552 W Aquaprimer	1
Top coat ⁽³⁾	Sikagard [®] -550 W Elastic	2 – 3

Note ⁽¹⁾

Please refer to the respective data sheet for additional information.

Note ⁽²⁾

For very difficult substrate (very dense or weak with tensile strength < 1 N/mm²) and at low temperature, use solvent containing primer Sikagard[®]-551 S Elastic Primer.

Note ⁽³⁾

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 Details

Consumption

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

Substrate Preparation

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 smoothing coating (e.g. Sika® MonoTop®-620, 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.

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/mm² with no single value below 0.5 N/mm². – refer to the relevant Method Statement for more details

For water based coating, use Sikagard-552 W Aquaprimer as primer.

For solvent based coating, use Sikagard-551 S Elastic Primer as primer.

In case of doubt, 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/mm² is required with no single value below 0.5 N/mm².

Application Conditions / Limitations

Substrate Temperature +8°C min. / +35°C max.

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

Relative Air Humidity < 80%

Dew Point Temperature must be at least 3°C above dew point.

Application Instructions

Mixing The materials are supplied ready for use. Stir thoroughly prior to application.

Application Method / Tools 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.

Waiting Time / Overcoating	Waiting time between coats at +20°C substrate temperature:		
	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
	<p>Note: When application is on existing coatings, the waiting time for both primers will increase by 100%.</p> <p>Refresher coats of Sikagard®-550 W Elastic can be applied without priming if the existing coat has been thoroughly cleaned.</p>		
Notes on Application / Limitations	<p>Do not apply when there is:</p> <ul style="list-style-type: none"> - Expected rain - Relative humidity > 80% - Temperature below +8°C and/or below dew point - Concrete younger than 28 days <p>The system is resistant to aggressive atmospheric influences.</p>		
Curing Details			
Curing Treatment	Sikagard®-550 W Elastic does not require any special curing but must be protected from rain for at least 4 hours at +20°C.		
Applied Product ready for use	Full cure: ~ 7 days at +20°C		
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	<p>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.</p>		

EU Regulation 2004/42

VOC - Decopaint Directive


According to the EU-Directive 2004/42, the maximum allowed content of VOC (Product category IIA / c type **wb**) is 75 / 40 g/l (Limits 2007 / 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.

CE Labelling

The harmonised 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 system for concrete” specifies the requirements for coatings to be used to protect concrete structures (either building or civil engineering structures).

Coatings used as concrete protection fall under this specifications – they need to be CE-labelled as per Annex Za, table Za.1d & 1e, conformity 2+ and 4 and fulfil the requirements of the given mandate of the Construction Product Directives (89/106/EC).

	
0921 Sika Services AG Factory Number 1125 Tüffenwies, Zürich, Switzerland 09	
0921-BPR-2046 EN 1504-2 Surface protection products Protective coating	
Permeability to CO ₂	S _D > 50 m
Permeability to water vapour	S _D < 5 m (class I)
Capillary absorption and permeability to water	ω < 0,1 kg/m ² .h ^{0,5}
Adhesion Strength by pull-off test	≥ 0,8 (0,5) N/mm ²
Reaction to fire after application	Class F
Dangerous substances comply with 5.3	



Sika Limited
Watchmead
Welwyn Garden City
Hertfordshire
AL7 1BQ
United Kingdom

Phone +44 1707 394444
Telefax +44 1707 329129
www.sika.co.uk, email: sales@uk.sika.com

