

PRODUCT DATA SHEET

Sikagard®-550 W Elastic

Crack bridging protective coating for concrete

DESCRIPTION

Sikagard®-550 W Elastic is a one part, 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

As a protective and decorative coating the product can be used for the following applications:

- New concrete or reinforced concrete structures and elements at risk of cracking
- Concrete repair refurbishment works over Sika® pore filling or smoothing mortars and overcoating existing firmly bonded coatings
- Reducing the deterioration of concrete and assisting with controlling the corrosion of any embedded steel reinforcement
- Increasing the service life to all types of concrete structures and elements subject to cracking / cyclic movement
- Buildings
- Bridges
- Car parks

The Product is suitable for:

- Protection against ingress (Principle 1, method 1.3 of EN 1504-9),
- Moisture control (Principle 2, method 2.3 of EN 1504-9)
- Increasing the resistivity (Principle 8, method 8.3 of EN 1504-9)

The Product is not suitable for:

- Ozone or electrolysis water treatment
- High chlorine concentrations (determined in DIN 19643-2) may cause chalking and discolouration

CHARACTERISTICS / ADVANTAGES

- 1-part ready to use
- Applied by brush, roller or airless spray
- Available in many colours
- Crack-bridging at low temperatures (-20 °C)
- Easily maintained by overcoating
- Free of toluene and other aromatic solvents
- Good adhesion to concrete
- High diffusion resistance against CO₂ reducing the rate of carbonation
- Reduced tendency to dirt pick-up and contamination
- Very good resistance against weathering and ageing
- Water vapour permeable
- Water-based

APPROVALS / CERTIFICATES

- CE Marking and Declaration of Performance to EN 1504-2 - Surface protection product for concrete - Coating
- Surface protection system OS-DII ZTV-SIB 90, Sika MonoTop®-620, Sikagard®-545 W Elastofill / -550 W Elastic, Institut für Bauforschung Germany, Test report No. A 2714/D2/V12
- Performance testing, EN 1504-2, Sikagard®-550 W Elastic, LPM AG, Report No. A-33'882-1, A-33'882-2E
- Determination of crack bridging, EN 1062-7, kiwa, Report No. P 8690a

PRODUCT INFORMATION

Composition	Acrylate dispersion
Packaging	15 L container
Appearance / Colour	Thixotropic liquid Final appearance: Smooth matt finish Available in many colours. Please contact our customer service, for information on which colors are sold in Denmark.
Shelf life	24 months from date of production.
Storage conditions	The product must be stored in original, unopened and undamaged packaging in dry conditions at temperatures between +5 °C and +25 °C. Always refer to packaging.
Density	~1.39 kg/l (at +20 °C)
Solid content by mass	~66.1 %
Solid content by volume	~53.4 %
Product declaration	EN 1504-2: Surface protection product for concrete - Coating

TECHNICAL INFORMATION

Tensile strain at break	At room temperature (not exposed to weathering)	~120 %	
	At -20 °C	~70 %	
Tensile adhesion strength	2.9 (2.8) N/mm ²		(EN 1542)
Crack bridging ability	2 coats	Class A1 (-20 °C)	(EN 1062-7)
	3 coats	Class B2 (-15 °C)	
Freeze thaw de-icing salt resistance	2.9 (2.1) N/mm ²		(EN 13687 part 1 & part 2)
Behaviour after artificial weathering	Pass after 2000 hours		(EN 1062-11)
Permeability to water vapour	Dry film thickness	d = 230 µm	(EN ISO 7783-1)
	Equivalent air layer thickness	SD, H ₂ O = 0.35 m	(EN ISO 7783-2)
	Diffusion coefficient H ₂ O	µH ₂ O = 1.5 × 10 ³	
	Requirements for breathability	≤ 5 m	
Capillary absorption	w = 0.02 kg/(m ² h ^{0.5})		(EN 1062-3)
Permeability to carbon dioxide	Dry film thickness	d = 160 µm	(EN 1062-6)
	Equivalent air layer thickness	S _D , CO ₂ = 51 m	
	Diffusion coefficient CO ₂	µCO ₂ = 3.1 × 10 ⁵	
	Requirements for protection	SD, CO ₂ ≥ 50 m	

SYSTEM INFORMATION

System structure	System	Product	Number of applications
	Priming	Sikagard®-552 W Aquaprimer or Sikagard®-551 S Elastic Primer	1
	Top coat	Sikagard®-550 W Elastic	2–3

*For intensive yellow or red colour shades and / or a dark substrate, more than 2 coats maybe required (or greater thickness per coat).

Primer options

Normal absorbent concrete	Sikagard®-552 W Aquaprimer
Dense, non-absorbent concrete	Sikagard®-551 S Elastic Primer

Sika® levelling / re-profiling mortars, weak concrete with a tensile adhesion strength < 1 N/mm²:
Sikagard®-551 S Elastic Primer with up to 10 % Sika® Thinner C
Very dense concrete:
Sikagard®-551 S Elastic Primer with up to 10 % Sika® Thinner C

APPLICATION INFORMATION

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

These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level, wastage or any other variations. Apply product to a test area to calculate the exact consumption for the specific substrate conditions and proposed application equipment.

Layer thickness	Minimum required dry film thickness to achieve the required characteristics (CO ₂ equivalent air thickness of 50 m) ≈ 160 µm. Minimum required dry film thickness to achieve full durability characteristics (CO ₂ diffusion, adhesion after thermal cycling and crack bridging) ≈ 340 µm.												
Ambient air temperature	+8 °C min. / +35 °C max.												
Relative air humidity	< 80 %												
Dew point	Substrate and ambient temperature must be at least 3 °C above dew point.												
Substrate temperature	+8 °C min. / +35 °C max.												
Waiting time to overcoating	Waiting time between coats at +20 °C substrate temperature: <table border="1"> <thead> <tr> <th>Previous coating</th> <th>Next coating</th> <th>Waiting time</th> </tr> </thead> <tbody> <tr> <td>Sikagard®-552 W Aquaprimer</td> <td>Sikagard®-550 W Elastic</td> <td>5 hours min.</td> </tr> <tr> <td>Sikagard®-551 S Elastic Primer</td> <td>Sikagard®-550 W Elastic</td> <td>18 hours min.</td> </tr> <tr> <td>Sikagard®-550 W Elastic</td> <td>Sikagard®-550 W Elastic</td> <td>8 hours min.</td> </tr> </tbody> </table> <p>Times are approximate and will be affected by film thickness, changing ambient conditions particularly temperature and relative humidity. When application is on existing coatings, the waiting time for both primers will increase by 100 %. Maintenance coats of Sikagard®-550 W Elastic can be applied without priming if the existing coat has been thoroughly cleaned.</p>	Previous coating	Next coating	Waiting time	Sikagard®-552 W Aquaprimer	Sikagard®-550 W Elastic	5 hours min.	Sikagard®-551 S Elastic Primer	Sikagard®-550 W Elastic	18 hours min.	Sikagard®-550 W Elastic	Sikagard®-550 W Elastic	8 hours min.
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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

Times is approximate and will be affected by film thickness, changing ambient conditions particularly temperature and relative humidity.

BASIS OF PRODUCT DATA

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.

IMPORTANT CONSIDERATIONS

- Do not apply if rain is expected
- Application during cold temperatures below recommended application temperatures may reduce adhesion values.
- Allow enough time for substrate to dry after rain or other inclement conditions.
- During application, regular monitoring of the wet film thickness and material consumption is advised to ensure the correct layer thickness is achieved.
- Ensure the primer is thoroughly dry before overcoating to prevent formation of bubbles and blisters, particularly in warmer weather.
- Dark colour shades (especially black, dark red and blue, etc.) may fade quicker than other lighter colour shades. Therefore, a maintenance / refresher coat might be required at an earlier interval than usual.

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.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

IMPORTANT

On substrates with a rough surface profile, it will be difficult to produce an even coating thickness. This may result in reduced protection and cleanability. Pre-levelling or smoothing the surface is recommended before coating application.

Substrate without existing coating or hydrophobic impregnation

- The substrate must be clean, dry and free of all contaminants such as dirt, oil, grease, surface treatments and loose friable material which can reduce the adhesion of the coating.
- New concrete must be at least 28 days old.
- Prepare the substrate mechanically using suitable equipment such as abrasive blast cleaning or high-pressure water jetting to achieve a textured surface profile suitable for the product thickness and required coating adhesion values.
- Remove weak cementitious substrates
- Fully expose surface defects such as blow holes and voids.
- Prefill surface defects, blowholes, cavities pores etc. using a pore filler (e.g. Sikagard®-550 W Elastic, Sika MonoTop®-723 N, Sikagard®-720 EpoCem® etc.) to provide a defect free surface.
- If Sikagard®-545 W Elastofill or Sikagard®-720 EpoCem® is used, the Product can be applied within 24 hours.

Substrate with existing coating

- Existing coatings must be tested to confirm their adhesion to the substrate and their compatibility. As guidance, in the absence of any national standards or regulations use the following tensile adhesion values: adhesion test average $\geq 0.8 \text{ N/mm}^2$ with no single value below 0.5 N/mm^2 .

Inadequate adhesion

- Existing coatings must be completely removed and prepared the same as for 'Substrate without existing coating'.

Adequate adhesion

1. Thoroughly clean the existing fully bonded coated surfaces of all contaminants using steam cleaning, low- pressure power washing or high-pressure water jetting equipment.
2. Lightly abrade or grind the surface with mechanical grinding or abrading equipment to achieve a gloss / sheen free surface.
3. Remove dust by industrial vacuuming equipment.
4. For a water-based existing coating, use Sikagard®-552 W Aquaprimer as a primer.
5. For a solvent-based existing coating, use Sikagard®-551 S Elastic Primer as a primer.
6. If the coating type is unknown, carry out compatibility and adhesion testing to determine which primer is most suitable. Wait at least 2 weeks before carrying out tensile adhesion tests.

APPLICATION

Strictly follow installation procedures as defined in method statements, application manuals and working instructions which must always be adjusted to the actual site conditions.

Reference must be made to the Sika Method Statement: Protective Coatings

Note: Confirm waiting / overcoating times of any previous mortars, primers or coats is achieved before applying subsequent coats. (Refer to waiting / overcoating time in Application Information)

Note: Confirm product application conditions: substrate moisture content, substrate, air and product temperatures, relative humidity and dew point.

Note: Make sure the application area is well ventilated during application and drying.

Note: To prevent air bubbles affecting the finish, do not 'over' brush, roller or spray.

Manual application

1. Apply the Product evenly over the surface with a brush or short pile fleece roller at the required consumption.
2. Control the layer thickness during application using a thickness gauge to achieve the required total dry film thickness.
3. The coating must be continuous, pore free and to the required surface finish.
4. Protect the Product from heavy rain or rain showers until dry to prevent surface damage.
5. Apply additional coats as required.

Airless spray application

IMPORTANT

Do not use aerosol car body type spraying equipment

1. Spray apply the product in a continuous cross-spray operation and at a speed to achieve a consistent thickness and the required surface finish.
2. Control the layer thickness during application using a thickness gauge.
3. The coating must be continuous, pore free and to the required surface finish.
4. Protect the Product from heavy rain or rain showers until dry to prevent surface damage.
5. Apply additional coats as required.

CLEANING OF EQUIPMENT

Clean all tools and application equipment with water immediately after use.

Hardened material can only be mechanically removed.

For Sikagard®-551 S Elastic Primer use Sika® Thinner C.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

LEGAL NOTES

Any information or suggestions for use concerning Sika's products, which we either in writing or orally have given buyers or end-users of the product, have been given in good faith based on our own experiences and based on approved praxis and the technological and scientific knowledge on the time of giving such suggestions and information, which are given without any type of guarantees, and which do not lead to any further responsibility from Sika Danmark A/S, besides what is stated in the sales agreement in question. The buyer or end-user should themselves investigate or otherwise make sure, that our products are suitable for the use in question and further make sure that the products are kept and used correct and in agreement with the published rules and considering the actual conditions in order to avoid damages or less satisfactory results. Any order is accepted and any deliverance is affected according to the general terms of sales and delivery from Sika Danmark A/S, which are considered known and accepted, and which could be handed out when asked for. Our catalogues are not up-dated automatically. The present product data sheet is only for use in Denmark. Values stated in the present product data sheet should be seen as recommended, unless stated otherwise.

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PRODUCT DATA SHEET

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