

Sikagard®-545 W Elastofill

Intermediate coat for crack bridging protective coating system

Product Description

Sikagard-545 W Elastofill is an elastic acrylic copolymer dispersion intermediate
Sikagard-545 W Elastofill is part of a crack-bridging system comprising of:

- Sikagard®-551 S Elastic Primer (solvent containing) or Sikagard®-552 W Aquaprimer (water-based) as a primer
- Sikagard®-545 W Elastofill as intermediate coat
- Sikagard®-550 W Elastic as top coat

Sikagard® crack bridging system complies with the requirements of EN 1504-2 as protective coating.

Uses

Sikagard-545 W Elastofill is designed as a crack-bridging intermediate coat in combination with Sikagard-550 W Elastic

Sikagard®-545 W Elastofill as a filler coat closes pores, cavities and blowholes, trowel applied re-profiling mortar

Sikagard®-550 W Elastic as a coloured top coat protects and embellishes

Sikagard® crack bridging system is used for protection and enhancement of concrete structures (normal and lightweight concrete), especially outdoor exposed concrete surfaces with a high risk of cracking

- Suitable for protection against ingress (Principle 1, method 1.3 of EN 1504-9),
- Suitable for moisture control (Principle 2, method 2.3 of EN 1504-9)
- Suitable for increasing the resistivity (Principle 8, method 8.3 of EN 1504-9)

Characteristics / Advantages

- Water thinnable, ecologically harmless
- Easy to apply
- Easy filling properties for pores, small cavities and blowholes
- Outstanding carbonation inhibitor
- Good water vapour permeability
- Crack-bridging even at low temperatures (-20°C)
- Can retain board mark texture/formwork patterns if required
- Resistant to freeze/thaw and de-icing salts

Tests

Approval / Standards

Test according to ZTV SIB 90, TL/TP-OS-D II:
LPM, Switzerland Test report No. A -33'883-2 dated July 09

Product Data

Form

Appearance / Colour Light grey paste

Packaging 15 l oval plastic pail

Storage

Storage Conditions / Shelf-Life 12 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 ~ 1.24 kg/l (at +20°C)

Solid Volume ~ 62%

Layer Thickness This will depend on the site requirement and use of the product

Carbon Dioxide Diffusion Coefficient (μCO_2)

Dry film thickness	d = 690 μm
Equivalent air layer thickness	$S_D \text{ CO}_2 = 83 \text{ m}$
Diffusion coefficient CO_2	$\mu\text{CO}_2 = 1,2 \times 10^5$
Requirements for protection	$S_D \text{ CO}_2 \geq 50 \text{ m}$

Water Vapour Diffusion Coefficient ($\mu\text{H}_2\text{O}$)

Dry film thickness	d = 600 μm
Equivalent air layer thickness	$S_D, \text{H}_2\text{O} = 0,65 \text{ m}$
Diffusion coefficient H_2O	$\mu\text{H}_2\text{O} = 1.1 \times 10^3$
Requirements for breathability	$S_D, \text{H}_2\text{O} \leq 5 \text{ m}$

Mechanical / Physical Properties

Elongation at Tear Elongation at break at room temperature (not exposed to weathering): 63%
Elongation at break at -20°C: 32%

Crack-Bridging Ability Class A3 (-20°C) EN 1062-7

Cross Cut GT 0 EN ISO 2409

Capillary Absorption $w = 0,02 \text{ kg}/(\text{m}^2\text{h}^{0.5})$ EN 1062-3

Pull-off 1,0 N/mm² EN 1542

Adhesion after Thermal Compatibility For Outside Application with De-Icing Salt Influence:
0,8 (0,7) N/mm² EN 13687-part 1 & part 2

Artificial Weathering Pass after 2000 hours EN 1062-11

Notes The test data given for the products performance in crack bridging, carbon dioxide and water vapour diffusion resistance and typical thickness etc. are given as part of a system in combination with Sikagard®-550W Elastic (details see test report A-33'883-2 from LPM).

System Information

System Structure

System	Product ⁽¹⁾	Number of application
Priming ⁽²⁾	Sikagard®-552 W Aquaprimer	1
Intermediate coat ⁽³⁾	Sikagard®-545 W Elastofill	1 - 2 ⁽³⁾
Top coat ⁽⁴⁾	Sikagard®-550 W Elastic	2

Note⁽¹⁾

Please refer to the respective product data sheet for additional information

Note⁽²⁾

For concrete with a surface tensile adhesive strength < 1 N/mm² use solvent containing primer Sikagard®-551 S Elastic Primer

Note⁽³⁾

Number of application layer of Sikagard®-545 W Elastofill depend on technical requirement, substrate condition or application (e.g. overhead application, high crack bridging requirement, etc.).

Note⁽⁴⁾

In case of an intensive yellow or red colour shade and/or a dark substrate, more than two coats might be required.

Application Details

Consumption

Product	Per layer	
Sikagard®-552 W Aquaprimer	-	~ 0.10 - 0.15 kg/m ²
Sikagard®-545 W Elastofill	~ 0.60 - 0.85 l/m ²	~ 0.80 - 1.10 kg/m ²
Sikagard®-550 W Elastic	~ 0.18 - 0.25 l/m ²	~ 0.25 - 0.35 kg/m ²

Substrate Preparation

Exposed concrete without old 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 cement based pore sealer (e.g. Sika® MonoTop®-723 N, Sikagard®-720 EpoCem® etc.) can be used – refer to the respective product data sheet. 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/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.

Please note:

The concrete surface must have a fine gripping texture. Very smooth surfaces may require two applications with Sikagard®-545 W Elastofill-in order to close up all surface blowholes and pores etc.

Application Conditions / Limitations

Substrate Temperature	+8°C min. / +30°C max.
Ambient Temperature	+8°C min. / +30°C max.
Relative Air Humidity	< 80%
Dew Point	Temperature must be at least 3°C above dew point.

Application Instructions

Mixing The material is supplied ready for use. Stir thoroughly prior to application.

Application Method / Tools

Priming coat:

Apply Sikagard®-551 S Elastic Primer or Sikagard®-552 W Aquaprimer evenly onto the substrate. On very dense substrates up to 10% Sika Thinner C may be added to Sikagard®-551 S Elastic Primer.

Intermediate coat:

Sikagard®-545 W Elastofill shall be applied by brush or mechanical spray (screw type pump).

Blowholes and pores etc. must be carefully filled, using sufficient material. Attention must be paid to endure a uniform application.

If a decorative surface texture is to be preserved, application must be carried out following the lines of the texture runs.

Texturing of the surface:

First application as described above.

For the second application, Sikagard®-545 W Elastofill shall be rolled on with short-piled rollers with the addition of 2 to 3% water. This method gives an attractive finished texture.

Trowel applied re-profiling mortar:

Add & mix with electric stirrer up to 20% by wt of 0.1 - 0.3mm kiln dried quartz sand to Sikagard 545 Elastofill to achieve the required consistency and apply and smooth by trowel. Note mechanical properties will change when sand is added.

Top coat:

Sikagard®-550 W Elastic shall 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®-545 W Elastofill
Sikagard®-551 S Elastic Primer	18 hours min.	Sikagard®-545 W Elastofill
Sikagard®-545 W Elastofill	12 hours min.	Sikagard®-545 W Elastofill
Sikagard®-545 W Elastofill	10 hours min.	Sikagard®-550 W Elastic
Sikagard®-550 W Elastic	8 hours min.	Sikagard®-550 W Elastic

Note: refresher coat of Sikagard®-545 W Elastofill or Sikagard®-550 W Elastic can be applied without priming if the existing coat has been thoroughly cleaned.

Adhesion tests are always recommended in maintenance and refurbishment works.

Notes on Application / 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

The system is resistant to aggressive atmospheric influences.

Addition of quartz sand for trowel applied Re-profiling mortar will affect mechanical /physical properties.

Curing Details

Curing Treatment Sikagard®-545 W Elastofill does not require any special curing but must be protected from rain for at least 6 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 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 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 (Limit 2007 / 2010) for the ready to use product.
The maximum content of **Sikagard®-545 W Elastofill** is < 40 g/l VOC for the ready to use product.



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