

## PRODUCT DATA SHEET

# Sikagard®-545 W Elastofill

Acrylic crack-bridging intermediate protective coating for concrete

### PRODUCT DESCRIPTION

Sikagard®-545 W Elastofill is a 1-part, acrylic, water-based, crack-bridging, intermediate surface protection coating for concrete.

It fills surface pores, cavities and blowholes or provides a smooth or textured levelling layer for subsequent protection coating topcoats. Sikagard-545W Elastofill is part of the Sikagard crack-bridging, anti-carbonation, surface protection coating system for concrete and complies with the requirements of EN 1504-2.

### USES

- Crack-bridging intermediate coat beneath Sikagard®-550 W Elastic top coat
- Filling pores, cavities and blowholes
- Levelling / re-profiling layer

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)

### PRODUCT INFORMATION

<b>Chemical Base</b>	Water-based acrylate
<b>Packaging</b>	15 L containers Refer to current price list for packaging variations
<b>Appearance / Colour</b>	Light grey thixotropic paste
<b>Shelf Life</b>	12 months from date of production
<b>Storage Conditions</b>	The product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +30 °C. Always refer to packaging.
<b>Density</b>	~1,24 kg/l (at +20 °C)

### CHARACTERISTICS / ADVANTAGES

- Water dilutable
- Easy to apply compared to cementitious levelling coats
- Smooth filling of pores, small cavities and blowholes
- Good diffusion resistance against CO<sub>2</sub> reducing the rate of carbonation
- Good water vapour permeability
- Crack-bridging at low temperatures (-20°C)
- Retains board mark texture/formwork patterns on finished surface
- Resistant to freeze/thaw and de-icing salts

### APPROVALS / STANDARDS

- 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

## TECHNICAL INFORMATION

Elongation at Break	Room temperature*	~63 %
	-20 °C	~32 %
*not exposed to weathering		
Tensile adhesion strength	1,0 N/mm <sup>2</sup>	(EN 1542)
For concrete with a tensile adhesion strength <1 N/mm <sup>2</sup> use Sikagard®-551 S Elastic Primer before applying Sikagard®-545 W Elastofill		
Crack Bridging Ability	Class A3 (-20 °C)	(EN 1062-7)
Freeze Thaw De-icing Salt Resistance	0,8 (0,7) N/mm <sup>2</sup>	(EN 13687-part 1 & part 2)
Behaviour after Artificial Weathering	Pass after 2000 hours	(EN 1062-11)
Diffusion Resistance to Water Vapour	Dry film thickness	d = 600 µm (EN ISO 7783-1 & -2)
	Diffusion coefficient H <sub>2</sub> O	µH <sub>2</sub> O = 1,1 × 10 <sup>3</sup>
	Equivalent air layer thickness	S <sub>D, H<sub>2</sub>O</sub> = 0,65 m
	Requirements for breathability	S <sub>D, H<sub>2</sub>O</sub> ≤ 5 m
Capillary Absorption	w = 0,02 kg/(m <sup>2</sup> h <sup>0.5</sup> )	(EN 1062-3)
Carbonation Resistance	Dry film thickness	d = 690 µm
	Diffusion coefficient CO <sub>2</sub>	µCO <sub>2</sub> = 1,2 × 10 <sup>5</sup>
	Equivalent air layer thickness	S <sub>D, CO<sub>2</sub></sub> = 83 m
	Requirements for breathability	S <sub>D, CO<sub>2</sub></sub> ≥ 50 m

## SYSTEM INFORMATION

System Structure	Sikagard® crack-bridging system:		
	<b>Coating</b>	<b>Product</b>	<b>Number of coats</b>
	Primer (water-based)	Sikagard®-552 W Aquaprimer	1
	Primer (solvent-based)	Sikagard®-551 S Elastic Primer	1
	Intermediate coat	Sikagard®-545 W Elastofill	1-2*
Top coat	Sikagard®-550 W Elastic	2**	
* Number of coats depend on technical requirements, substrate condition or application (e.g. overhead application, high crack bridging requirement, etc.).			
** For light colours on a dark substrate, more than 2 coats maybe required.			

## APPLICATION INFORMATION

Consumption	<b>Product</b>	<b>Per Coat (kg/m<sup>2</sup>)</b>
	Sikagard®-552 W Aquaprimer	~0,10-0,15
	Sikagard®-551 S Elastic Primer	~0,10-0,15
	Sikagard®-545 W Elastofill	~0,80-1,10
	Sikagard®-550 W Elastic	~0,25-0,35

These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc.

**Layer Thickness** Dependant on technical requirements, substrate condition or application

<b>Ambient Air Temperature</b>	+8 °C min. / +30 °C max.	
<b>Relative Air Humidity</b>	≤ 80 %	
<b>Dew Point</b>	Substrate and ambient temperature must be at least +3 °C above dew point	
<b>Substrate Temperature</b>	+8 °C min. / +30 °C max.	
<b>Waiting Time / Overcoating</b>	Waiting time between coats at +20 °C substrate temperature:	
	<b>Coating</b>	<b>Minimum</b>
	Sikagard®-552 W Aquaprimer	~5 hours
	Sikagard®-551 S Elastic Primer	~18 hours
	Sikagard®-545 W Elastofill	~12 hours
	Sikagard®-545 W Elastofill	~10 hours
	<b>Next Coating</b>	
	Sikagard®-545 W Elastofill	
	Sikagard®-545 W Elastofill	
	Sikagard®-545 W Elastofill	
	Sikagard®-550 W Elastic	
	Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity.	
<b>Curing Treatment</b>	Sikagard®-545 W Elastofill does not require any special curing but must be protected from rain for at least 6 hours at +20 °C.	
<b>Applied Product Ready for Use</b>	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.

## LIMITATIONS

- Application during cold temperatures below recommended application temperatures may reduce adhesion values.
- Allow sufficient 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.
- When over-coating existing coatings, compatibility and adhesion testing is recommended.
- Ensure the primer is thoroughly dry before over-coating to prevent formation of bubbles and blisters, particularly in warmer weather.

Do not apply when there is:

- Rain expected.
- Relative humidity > 80 %.
- Temperature below +8 °C and/or below dew point.
- Concrete < 28 days old.

## 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 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.

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY / PRE-TREATMENT

#### EXPOSED CONCRETE WITHOUT EXISTING COATING

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.

Substrate must be prepared 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.

New concrete must be at least 28 days old.

Surface defects, blowholes, cavities pores etc. must first be prefilled using a pore filler( e.g. Sikagard®-545 W Elastofill, Sika® MonoTop®-723 N, Sikagard®-720 EpoCem® etc.) to provide a defect free surface.

Allow a curing time of at least 4 days before coating. If Sikagard®-545 W Elastofill or Sikagard®-720 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 compatibility. As guidance, in the absence of any national standards or regulations, adhesion test average ≥ 0,8 N/mm<sup>2</sup> with no single value below 0,5 N/mm<sup>2</sup>.

#### Inadequate adhesion

Existing coatings must be completely removed using

suitable equipment and the substrate prepared the same as for 'Without Existing Coating'.

#### **Adequate adhesion**

Thoroughly clean the existing fully bonded coating surfaces of all contaminants using suitable equipment such as steam cleaning or high pressure water jetting. For water-based existing coating, use Sikagard®-552 W Aquaprimer as a primer.

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

If coating type is unknown, carry out compatibility and adhesion testing to determine which primer is most suitable. Wait at least 2 weeks before conducting the adhesion test, as guidance, adhesion test average  $\geq 0,8 \text{ N/mm}^2$  with no single value below  $0,5 \text{ N/mm}^2$ .

#### **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.

##### **Primer coat**

After application and curing of any levelling/smoothing coat /pore filler, apply by brush or roller, 1 coat of the appropriate primer at the required consumption rate, to all the surfaces requiring the Sikagard®-545 W Elastofill coating.

##### **Intermediate coat**

Sikagard®-545 W Elastofill is supplied ready for use.

Before application, mix for 2 minutes using a low speed electric single paddle mixer or other suitable equipment. Mix the liquid and all the coloured pigment until a uniform colour has been achieved.

After application and waiting time of the primer, apply evenly by brush, mechanical spray (screw type pump) or suitable trowel, 1-2 coats of Sikagard®-545 W Elastofill to achieve the required total dry film thickness.

If a decorative surface texture is to be maintained, application must be carried out following the same direction of the texture profile.

##### **Texturing the surface**

Apply the intermediate coat as described in previous section and allow to dry.

The final textured surface can be achieved by applying another coating application with the addition of 2-3% water added to Sikagard®-545 W Elastofill using short-piled rollers. Consumption depends on surface texture required.

To achieve a board mark finish, instead of using rollers, use a timber board to make an imprint of the grain in the coating.

#### **CLEANING OF TOOLS**

Clean all tools and application equipment with water

immediately after use. Hardened material can only be mechanically removed.

#### **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.

#### **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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#### **Product Data Sheet**

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