BUILDING TRUST

PRODUCT DATA SHEET

Sikagard®-550 W (IN)

ANTI-CARBONATION AND CRACK BRIDGING PROTECTIVE COATING FOR CONCRETE

DESCRIPTION

Sikagard®-550 W (IN) is a one part, plasto-elastic coating based on UV-curing acrylic dispersion with excellent crack-bridging & anti-carbonation properties even at low temperatures.

USES

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

CHARACTERISTICS / ADVANTAGES

- Crack-bridging even at low temperatures
- High diffusion resistance against CO_2 reducing the rate of carbonation
- Water vapour permeable
- Very good resistance against weathering and ageing
- Preventative protection for new reinforced concrete structures exposed to aggressive environments
- Environmentally friendly (solvent free)
- Reduced tendency to dirt pick up and contamination
- Exhibits good waterproofing characteristics and reduces water penetration

APPROVALS / STANDARDS

Confirms to IRC:SP:80

PRODUCT INFORMATION

Chemical Base	Acrylic polymer (acrylate) dispersion
Packaging	10 kg plastic bucket
Appearance / Colour	Thixotropic liquid available in various ~RAL shades
Shelf Life	12 months from date of production
Storage Conditions	Store properly in undamaged and unopened original sealed packaging in cool and dry conditions. Protect from direct sunlight and frost.
Density	1.4 ± 0.05 kg/L (at +30 °C)
Solid content by weight	~70 %

TECHNICAL INFORMATION

Elongation at Break	> 200 %	(ASTM D 638)
Tensile Strength	> 1.5 N/mm²	(ASTM D 638)
Tensile Adhesion Strength	> 1.5 N/mm²	(ASTM D 4541)

Crack Bridging Ability	No failure at 3.2 mm		(ASTM C 1305)
Resistance to UV Exposure	No colour change after 400 hours		(ASTM G 53)
Permeability to Water Vapour	Dry film thickness	d = 210 µm	(DIN 52615)
	Equivalent air layer thickness	S_D, H_2O = 1.69 m	
	Requirements for breathability	≤ 5 m	
Capillary Absorption	w < 0.1 kg/m²·h$^{0.5}$		(EN 1062-3)
Chloride Ion Diffusion Resistance	Negligible chloride ion penetrability		(ASTM C 1202)
Permeability to Carbon Dioxide	Dry film thickness	d = 210 µm	(EN 1062-6)
	Equivalent air layer thickness	S_D, CO_2 = 141.6 m	
	Requirements for protection	≥ 50 m	

SYSTEM INFORMATION

System Structure

Layer	Product[1)]	No of coats
Primer[2)]	Sikagard®-552 IN Primer W	1
Protective coating[3)]	Sikagard®-550 W (IN)	2

[1)] Please refer to the respective product data sheet for additional information.
[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.
[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 may also be required in order to achieve the required thickness for full durability (crack bridging, adhesion after thermal cycling, etc.)

APPLICATION INFORMATION

Mixing Ratio

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

Consumption

Product	Consumption
Sikagard®-551 S Elastic Primer	~0.100–0.150 kg/m²
Sikagard®-552 IN Primer W	~0.120–0.200 kg/m²
Sikagard®-550 W (IN)	~0.200–0.220 kg/m²/coat

The consumption may vary depending on substrate porosity, temperature and humidity.

Layer Thickness

200–225 microns in 2 coats (to achieve desired equivalent air thickness for CO_2 diffusion & Water vapour diffusion).

Ambient Air Temperature

+8 °C min. / +40 °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. / +40 °C max.

Waiting Time / Overcoating	Waiting time between coats at +20 °C substrate temperature:

Previous coating	Next coating	Waiting time
Sikagard®-551 S Elastic Primer	Sikagard®-550 W (IN)	18 hours min.
Sikagard®-552 IN Primer W	Sikagard®-550 W (IN)	6 hours min.
Sikagard®-550 W (IN)	Sikagard®-550 W (IN)	2 hours min.

Note:
- When application is on existing coatings, the waiting time for both primers will increase by 100%.
- Refresher coats of Sikagard®-550 W (IN) can be applied without priming if the existing coat has been thoroughly cleaned.

Applied Product Ready for Use	~7 days (full cure) at +20 °C

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

The substrate must be dense and free from loose and friable particles. Tensile strength of the substrate must be more than 1 N/mm2.

Exposed concrete without existing coating
Suitable preparation methods are steam cleaning, high pressure water jetting or blastcleaning. New concrete must be at least 28 days old.

Thin layer renderings
If required, a levelling pore sealer like Sikagard® -720 Epocem® IN or SikaLatex® Power modified cement putty shall be applied. For cement based products, allow a curing time of at least 4 days before priming (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 -
- adhesion test average > 0.8 N/mm2 with no single value below 0.5 N/mm2 for subsequent top elastic coating

Please refer to the relevant Method Statement for more details.
- For water based coating, use Sikagard®-552 IN Primer W as primer
- For solvent based coating, use Silane Siloxane modified primer Sikagard®-551 S Elastic

In case of doubt, carry out adherence testing to determine which primer is most suitable - wait at least 2 weeks after application prior to conduct the adhesion test as per EN 1542.

APPLICATION

Apply Sikagard®-552 IN Primer W or Sikagard®-551 S Elastic Primer 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 (IN) can be applied by brush, roller or airless spray.
For more details, refer to Protective Coating Application Method Statement.

CURING TREATMENT

Sikagard®-550 W (IN) does not require any special curing but must be protected from rain for at least 4 hours at +20 °C.

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
- The system is resistant to aggressive atmospheric influences.
- Dark colour shades may fade more rapidly than other lighter tone colours. Refreshing coat might be required at earlier interval than usual.

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.

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.

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.

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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