

Product Data Sheet

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Sikagard®-177

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2-part epoxy laminating resin, solvent free

Product Description

Sikagard®-177 is a two part, high viscosity epoxy resin.
 "Total solid epoxy composition acc. to the test method Deutsche Bauchemie e.V.
 (German Association for construction chemicals)"

Uses

- For priming concrete substrates and cement based mortars on vertical surfaces and ceilings
- For normal to strongly absorbent surfaces
- Laminating resin
- For interior protection of covered tanks and vessels in waste water treatment plants, with strong chemical attack at elevated temperatures

Characteristics / Advantages

- High viscosity
- Good sag resistance
- Good wetting properties for glass fabric matt
- High chemical resistance, also to hydrogen sulphite
- Resistant up to +60°C in immersion, depending on the media and top coat
- Easy application
- Low odour

Product Data**Test****Form****Appearance /Colours**

Resin - part A: transparent, liquid

Hardener - part B: transparent, liquid

Packaging

Part A: 7.5 kg containers

Part B: 3.0 kg containers

Sika Betonol Spezialglasgewebe (Sika Betonol Special Glass Fabric): 130m²/ roll**Storage****Storage Conditions/ Shelf-Life**

Part A: 12 month

Part B: 12 month

from date of production if stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +5°C and +30°C.

Construction

Technical Data

Chemical Base	Part A: Epoxy resin Part B: modified Polyamine
Density	Part A: ~ 1.10 kg/l Part B: ~ 1.02 kg/l Mixed Resin: ~ 1.1 kg/l (DIN EN ISO 2811-1) All density values at +23°C
Solid Content	~ 100% (by volume) / ~ 100% (by weight)

Resistance

Thermal Resistance

Exposure*	Dry heat
Permanent	+60°C
Short-term max. 7 d	+80°C
Short-term max. 12 h	+100°C

Short-term moist/wet heat* up to +80°C where exposure is only occasional (steam cleaning etc.).

*No simultaneous chemical and mechanical exposure.

System Information

System Structure

Rigid, not crack bridging

Pore filling mortar:

Cement based, polymer modified: 1 x Sika®-Icoment 520

or

Epoxy based, cement modified: 1 x Sikagard®-720 EpoCem

Levelling mortar:

Cement based, polymer modified: 1 x Sika®-Icoment® 520

or

Epoxy based, cement modified: 1 x Sikagard®-720 EpoCem

Primer::

Primer: 1 x Sikagard®-177

Top Coat:

Application by ,airless spray: 2 x Sika® Permacor® 3326 EG-H

Application by roller: 3 x Sika® Permacor® 3326 EG-H

Crack bridging

Pore filling mortar:

Cement based, polymer modified: 1 x Sika®-Icoment 520

or

Epoxy based, cement modified: 1 x Sikagard®-720 EpoCem

Levelling mortar:

Cement based, polymer modified: 1 x Sika®-Icoment® 520

or

Epoxy based, cement modified: 1 x Sikagard®-720 EpoCem

Laminate layer:

Embedment coat: 1 x Sikagard®-177

wet in wet: Betonol Spezialglasgewebe

after curing

Cover coat: 1 x Sikagard®-177

Top Coat:

Application by ,airless spray: 2 x Sika® Permacor® 3326 EG-H

Application by roller: 3 x Sika® Permacor® 3326 EG-H

Application Details

Consumption / Dosage

Coating System	Product	Consumption
Rigid, not crack bridging		
Pore filling mortar	1 x Sika® Icoment® 520 or 1 x Sikagard®-720 EpoCem	~1.5 kg/m ² ~1.5 kg/m ²
Levelling mortar	1 x Sika® Icoment® 520 or 1 x Sikagard®-720 EpoCem	~2.0 kg/m ² ~2.0 kg/m ²
Primer	1 x Sikagard®-177	~0.4 kg/m ²
Top coat (airless spray) or Top coat (roller application)	2 x Sika® Permacor® 3326 EG-H 3 x Sika® Permacor® 3326 EG-H	~0.65 kg/m ² each layer ~ 0.45kg/m ² each layer
Crack bridging		
Pore filling mortar	1 x Sika® Icoment® 520 or 1 x Sikagard®-720 EpoCem	~2.0 kg/m ² ~2.0 kg/m ²
Levelling mortar	1 x Sika® Icoment® 520 or 1 x Sikagard®-720 EpoCem	~2.0 kg/m ² ~2.0 kg/m ²
Embedment coat	1 x Sikagard®-177 1 x Betonol Spezialglasgewebe	~0.6 kg/m ² ~0.3 kg/m ²
Cover coat	1 x Sikagard®-177	~0.8 kg/m ²
Top coat (airless spray) or Top coat (roller application)	2 x Sika® Permacor® 3326 EG-H 3 x Sika® Permacor® 3326 EG-H	~0.65 kg/m ² each layer ~ 0.45kg/m ² each layer

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

Substrate Quality

Concrete substrates must be sound and of sufficient compressive strength (minimum 25 N/mm²) with a minimum pull off strength of 1.5 N/mm².

The substrate must be clean, dry and free of all contaminants such as dirt, oil, grease, coatings and surface treatments, etc.

If in doubt, apply a test area first.

Substrate Preparation

Concrete substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and achieve an open textured surface.

Weak concrete must be removed and surface defects such as blowholes and voids must be fully exposed.

Repairs to the substrate, filling of blowholes/voids and surface levelling must be carried out using appropriate products from the Sika® Icoment® and Sika® Monotop® range of materials.

High spots must be removed by e.g. grinding.

All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum.

Application Conditions / Limitations

Substrate Temperature +10°C min. / +30°C max.

Ambient Temperature +10°C min. / +30°C max.

Substrate Moisture Content < 4% pbw moisture content.

Test method: Sika®-Tramex meter, CM - measurement or Oven-dry-method.

No rising moisture according to ASTM (Polyethylene-sheet).

Relative Air Humidity 80% r.h. max.

Dew Point	<p>Beware of condensation!</p> <p>The substrate and uncured floor must be at least 3°C above dew point to reduce the risk of condensation or blooming on the floor finish.</p> <p>Note: Low temperatures and high humidity conditions increase the probability of blooming.</p>
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Application Instructions

Mixing	Part A : part B = 100 : 40 (by weight)
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Mixing Time	<p>Prior to mixing, stir part A mechanically. When all of part B has been added to part A, mix continuously for 3 minutes until a uniform mix has been achieved.</p> <p>To ensure thorough mixing pour materials into another container and mix again to achieve a consistent mix.</p> <p>Over mixing must be avoided to minimise air entrainment.</p>
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Mixing Tools	Sikagard®-177 must be thoroughly mixed using a low speed electric stirrer (300 - 400 rpm) or other suitable equipment.
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Application Method / Tools	<p>If > 4% pbw moisture content, Sikagard® EpoCem® may be applied as a T.M.B. (temporary moisture barrier) system.</p> <p><i>Primer:</i> Make sure that a continuous, pore free coat covers the substrate. Apply Sikagard®-177 by brush or roller.</p> <p><i>Embedment coat</i> Make sure that a continuous, pore free coat covers the substrate. Apply Sikagard®-177 by brush, roller or airless spray to the required thickness. Into the still wet layer embed the Betonol Spezialglasgewebe by short piled roller or plastic spatula. An overlapping of min. 5 cm of the glass fabric is required.</p> <p><i>Cover coat:</i> After curing of the embedment coat apply Sikagard®-177 by brush, roller airless spray.</p>
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Cleaning of Tools	Clean all tools and application equipment with Thinner C immediately after use. Hardened and/or cured material can only be removed mechanically.
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Potlife

Temperature	Time
+10°C	~ 40 minutes
+20°C	~ 30 minutes
+30°C	~ 15 minutes

Waiting Time / Overcoating

Before applying Sikagard®-177 on Sikagard®-177 allow:

Substrate temperature	Minimum	Maximum
+10°C	24 hours	72 hours
+20°C	16 hours	48 hours
+30°C	12 hours	24 hours

Before applying Sika® Permacor® 3326 EG-H on Sikagard®-177 allow:

Substrate temperature	Minimum	Maximum
+10°C	36 hours	72 hours
+20°C	24 hours	48 hours
+30°C	12 hours	36 hours

Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity.

Notes on Application / Limitations	<p>Do not apply Sikagard®-177 on substrates with rising moisture.</p> <p>Freshly applied Sikagard®-177 should be protected from damp, condensation and water for at least 24 hours.</p> <p>Avoid puddles on the surface with the primer.</p> <p>Entrapped air in the cured Sikagard®-177 laminate layer has to be cut out and re-coated before application of the top coat.</p> <p>Construction joints require pre-treatment. Treat as follows:</p> <ul style="list-style-type: none"> - Static Cracks: prefill and level with SikaDur® or Sikagard® epoxy resin - Dynamic cracks: to be assessed and if necessary apply a stripe coat of elastomeric material or design as a movement joint <p>The incorrect assessment and treatment of cracks may lead to a reduced service life and reflective cracking.</p> <p>If heating is required do not use gas, oil, paraffin or other fossil fuel heaters, these produce large quantities of both CO₂ and H₂O water vapour, which may adversely affect the finish. For heating use only electric powered warm air blower systems.</p>
Value Base	<p>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.</p>
Local Restrictions	<p>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.</p>
Health and Safety Information	<p>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.</p>
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	<p>According to the EU-Directive 2004/42, the maximum allowed content of VOC (Product category IIA / j type sb) is 500 g/l (Limit 2010) for the ready to use product.</p> <p>The maximum content of Sikagard®-177 is < 500 g/l VOC for the ready to use product.</p>
USGBC LEED Rating	<p>Sikagard®-177 conforms to the requirements of LEED EQ Credit 4.2: Low-Emitting Materials: Paints & Coatings SCAQMD Method 304-91 VOC Content < 100 g/l</p>



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