Construction

Sikalastic®-822

Liquid Applied Waterproofing Membrane

Product Description

Sikalastic®-822 is a two part, elastic, crack-bridging, polyurethane membrane. **Sikalastic®-822** is for manual application only.

Uses

- For use as a waterproofing membrane underneath hot poured asphalt on bridge decks
- For use as a waterproofing membrane for other concrete structures and on non-trafficked concrete areas with an additional top coat for UV-protection
- For use as a waterproofing membrane for repairing of Sikalastic®-821 and Sikalastic®-821 LV (particularly damages or from pull-off tests etc.)

Characteristics / Advantages

- Excellent crack-bridging properties
- Highly elastic waterproofing membrane

Tests

Approval / Standards

Conforms to the requirements of ZTV-BEL-B, Part 3, 1995 edition. Certificate: P 1700-1, P 1700-2; incl. shear bond test by the Polymer Institute Dr. Stenner GmbH.
The primer Sikagard-186 complies with TL/TP-BEL-EP of ZTV-BEL-B 1/87 and TL/TP-BEL-EP of ZTV-BEL-B (1998 draft). Certificate: P 1678-1 by the Polymer Institute Dr. Stenner GmbH.
Conforms to the requirements of DIN-4102, Part 7 “Fire behaviour of building materials and building components!. Certificate: 16-31835 by the Institute FMPA Stuttgart.

External Supervision

The Polymer Institute Dr. Stenner GmbH.

Product Data

Form

Appearance / Colours

Resin - part A : grey
Hardener - part B : clear / brownish
Grey ~ RAL 7005

Packaging

Part A : 21 kg container
Part B : 14 kg container
Part A+B: 35 kg ready to mix unit

Storage

Storage Conditions / Shelf Life

6 months 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	Polyurethane	
Density	Part A: ~ 1.69 kg/litre Part B: ~ 1.05 kg/litre Mixed resin: ~ 1.33 kg/litre All Density values at +23°C.	(DIN EN ISO 2811-1)
Solid Content	> 96%	
Viscosity	Part A: ~ 14500 mPas Part B: ~ 9300 mPas	
Layer Thickness	Minimum 2 mm.	

Mechanical / Physical Properties

Tensile Strength	4.4 N/mm² (28 days/+23°C)	(DIN 53504)
Shore Hardness		(DIN 53505)

	At +8°C	At +23°C
After 20 hours	53 - 55	63 - 65
After 7 days	65 - 66	73 - 74
After 28 days	66 - 69	74 - 75

Elongation at Break	388% (28 days/+23°C)	(DIN 53504)
Crack-Bridging Capacity	Dynamic crack-bridging properties of up to 0.3 mm at -20°C and static crack-bridging properties of up to 1.0 mm, even after the application of hot poured asphalt, artificial ageing and long term contact with bitumen. The indicated properties and characteristic values are not dependent on t he curing temperature.	
Resistance		
Chemical Resistance	**Sikalastic®-822** is resistant to: - De-icing salts - Bitumen - Alkalis	
Thermal Resistance	**Sikalastic®-822** is short-term resistant to hot poured asphalt applied at up to max. +240°C. The elastic properties are maintained at temperatures as low as -30°C.	

System Information

System Structure

System for bridge decks with hot poured asphalt:
Layer thickness: ≥ 2 mm
Primer: 1-2 x Sikagard-186, (lightly broadcast with quartz sand 0.4 - 0.7 mm)
Waterproofing : 1 x **Sikalastic®-822**
Tack coat : 1 x Sikalastic®-823
Asphalt : Hot poured asphalt

Repair compound for patching / repairs in Sikalastic®-821 or Sikalastic®-821 LV:
Bonding bridge : 1 x Sikalastic®-810 diluted with 15 wt.-% Thinner C
Waterproofing : **1 x Sikalastic®-822**
Tack coat : 1 x Sikalastic®-823
Asphalt : Hot poured asphalt

System for structures with UV-exposure (non-trafficked):
Layer thickness : ≥2 mm
Primer : 1 x Sikafloor®-156, (lightly broadcast with quartz sand 0.4 - 0.7 mm)
Waterproofing : 1 x **Sikalastic®-822**
UV-protection : 1 x Sikalastic®-445

System for structures without UV-exposure (non-trafficked):
Layer thickness : ≥ 2 mm
Primer: 1 x Sikafloor®-156, (lightly broadcast with quartz sand 0.4 - 0.7 mm)
Waterproofing : 1 x **Sikalastic®-822**

The system configuration as described must by fully complied with and may not be changed.

Application Details

Consumption / Dosage

Coating System	Product	Consumption
Levelling-up (if required)	Sikagard®-186 levelling mortar: 1 pbw Sikagard®-186 2 pbw quartz sand 0.1 - 0.3 mm 1 pbw quartz sand 0.7 - 1.2 mm Lightly broadcast with quartz sand, 0.4 - 0.7 mm	~ 2.0 kg/m² at roughness depth of 1 mm 1.0 - 1.5 kg/m²
Bonding bridge (when exceeding the max. waiting time, e.g. overlapps)	1x Sikalastic®-810 + 15 wt.-% Thinner C (Between **Sikalastic®-822** and Sikalastic®-822)	0.05 - 0.09 kg/m²
System for bridge decks with hot poured asphalt	1x Sikagard®-186, Lightly broadcast with quartz sand, 0.4 - 0.7 mm 1x **Sikalastic®-822** 1x Sikalastic-®-823 1 - 2 x Hot poured asphalt	0.3 - 0.5 kg/m² 1.0 - 1.5 kg/m² ~ 1.33 kg/m²/mm 0.09 - 0.110 kg/m² 1.5 - 4 cm
System for structures with UV-exposure	1x Sikafloor®-156, Lightly broadcast with quartz sand, 0.4 - 0.7 mm 1 x **Sikalastic®-822** 1 x Sikalastic®-445	0.3 - 0.5 kg/m² 1.0 - 1.5 kg/m² ~1.33 kg/m²/mm ~ 0.8 kg/m²
System for structures without UV-exposure	1 x Sikafloor®-156, Lightly broadcast with quartz sand, 0.4 - 0.7 mm 1x **Sikalastic®-822**	0.3 - 0.5 kg/m² 1.0 - 1.5 kg/m² ~1.33 kg/m²/mm

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

Substrate Quality	The concrete substrate must be sound and of sufficient compressive strength (minimum 25 N/mm^2) with a minimum pull off strength of 1.5 N/mm^2. 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 Sikafloor®, SikaDur® and SikaGard® range of materials. The concrete or screed substrate has to be primed or levelled in order to achieve an even surface. 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	+8°C min. / +40°C max.
Ambient Temperature	+8°C min. / +40°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	85% RH max.
Dew Point	Beware of condensation! The substrate and uncured membrane must be at least 3°C above the dew point to reduce the risk of condensation or blooming on the membrane finish.

Application Instructions

Mixing	Part A : part B = 60 : 40 (by weight)
Mixing Time	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. To ensure thorough mixing pour materials into another container and mix again to achieve a consistent mix. Over mixing must be avoided to minimise air entrainment.
Mixing Tools	**Sikalastic®-822** must be thoroughly mixed using a low speed electric stirrer (300 - 400 rpm) or other suitable equipment.
Application Method / Tools	Prior to application, confirm substrate moisture content, r.h. and dew point. *Primer:* Prime prepared concrete with Sikagard®-186. Sikagard®-186 must not just be rolled or poured. In order to avoid the formation of pinholes the primer must be brushed into the concrete surface, if necessary in two operations. After each operation lightly broadcast with quartz sand 0.4 - 0.7 mm. In order to avoid the formation of blisters do not broadcast in excess. *Levelling up:* Rough surfaces need to be levelled first. Use Sikagard®-186 levelling mortar (see relevant PDS). *Waterproofing:* **Sikalastic®-822** is poured and than spread evenly with a notched / toothed trowel. Roll immediately in two directions with a spiked roller to ensure even thickness and to remove any entrapped air. *Tack coat:* Prior to the application of hot poured asphalt, a tack coat of Sikalastic®-823 must be applied by brush, roller or spray. *Bonding bridge:* Uniformly spread 1 x Sikalastic®-810 using a short pile (12 mm) nylon roller or by spray.
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.

Potlife

Temperatures	Time
+10°C	~ 40 minutes
+20°C	~ 30 minutes
+30°C	~ 20 minutes
+40°C	~ 10 minutes

Waiting Time / Overcoating

Before applying **Sikalastic®-822** on Sikagard®-186 allow:

Substrate temperature	Minimum	Maximum
+10°C	~ 24 hours	1 month [1)]
+20°C	~ 20 hours	
+30°C	~ 16 hours	
+40°C	~ 14 hours	

Before applying **Sikalastic®-822** on Sikalastic®-821 / -821 LV allow:

Substrate temperature	Minimum	Maximum
+10°C	90 minutes	3 hours [2)]
+20°C	60 minutes	2 hours [2)]
+30°C	30 minutes	2 hours [2)]
+40°C	20 minutes	1 hour [2)]

Before applying Sikalastic®-810 and Sikalastic®-823 on **Sikalastic®-822** allow:

Substrate temperature	Minimum	Maximum
+10°C	16 hours	1 month [1)]
+20°C	12 hours	
+30°C	10 hours	
+40°C	8 hours	

Before applying **Sikalastic®-822** on **Sikalastic®-822** allow:

Substrate temperature	Minimum	Maximum
+10°C	16 hours	24 hours [2)]
+20°C	12 hours	18 hours [2)]
+30°C	10 hours	14 hours [2)]
+40°C	8 hours	10 hours [2)]

Before applying **Sikalastic®-822** on Sikalastic®-810 allow:

Substrate temperature	Minimum	Maximum
+10°C	3 hours	6 hours [3)]
+20°C	2 hours	4 hours [3)]
+30°C	1 hour	2 hours [3)]
+40°C	40 minutes	1 hour [3)]

Before applying hot poured asphalt on **Sikalastic®-822** allow:

Substrate temperature	Minimum	Maximum
+10°C	24 hours (first an intermediate layer of Sikalastic®-823 must be applied)	14 days [1)] (first an intermediate layer of Sikalastic®-823 must be applied)
+20°C		
+30°C		
+40°C		

Before applying hot poured asphalt on Sikalastic®-823 allow:

Substrate temperature	Minimum	Maximum
+10°C	60 minutes	14 days [1])
+20°C	45 minutes	
+30°C	30 minutes	
+45°C	20 minutes	

[1]) Assuming that dirt has been carefully removed and contamination is avoided.
[2]) If the max. waiting time is exceeded, then Sikalastic®-810 + 15 wt.-% Sika Thinner C must be applied as a bonding bridge.
[3]) If the max. waiting time is exceeded, then Sikalastic®-810 must be overworked with itself diluted with max. 20 wt.-% Sika Thinner C.

Note: Times are approximate and will be affected by changing ambient conditions.

Notes on Application / Limitations

In order to avoid blistering it is recommended to apply during falling temperatures.
Control film thicknesses during application by using a thickness gauge.
Temperatures of the substrate during application and curing: at least +8°C.
For application on vertical or inclined surfaces, up to 2 wt.-% Extender T must be added to increase sag resistance.
Tools
Recommended supplier of tools:
PPW-Polyplan-Werkzeuge GmbH, Phone: +49 40/5597260, www.polyplan.com.
Serrated trowel: e.g. Large-Surface Scrapper No. 565, Toothed blades No. 25.
Sikalastic®-822 is not UV light resistant and changes colour under UV exposure however the performance and properties are not affected provided the exposure is max. 4 weeks. It is therefore advisable to overcoat **Sikalastic®-822** with hot poured asphalt as early as possible.
Areas not to be overlaid with asphalt and which are permanently exposed to UV radiation must be overcoated with a suitable protective coating such as Sikalastic®-445. In wet areas or climatic zones with a permanent air humidity of > 80% in combination with a permanent air temperature of > +30°C, the adhesion promoter Sikalastic®-810 + 15 wt.-% Thinner C must be used.
Please note for areas with permanent water load that **Sikalastic®-822** is water vapour permeable.
Prior to placing the asphalt, the tack coat Sikalastic®-823 must be applied by brush, roller or spray.
Please note:
All systems with a different type of asphalt (i.e. other than hot poured asphalt) must be approved and in accordance with local specifications.
For this purpose a reference area must to be carried out, to be approved by the awarding authority. Sika excludes any responsibility for all asphalt layers.
If heating is required do not use gas, oil, paraffin or other fossil fuel heaters, these produce large quantities of both CO_2 and H_2O water vapour, which may adversely affect the finish. For heating use only electric powered warm air blower systems.

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Curing Details

Applied Product ready for use

Temperature	Rain resistant after	Ready for foot[1] traffic (carefully)	Ready for traffic[2]
+10°C	~ 90 minutes	~ 16 hours	~ 24 hours
+20°C	~ 40 minutes	~ 12 hours	~ 18 hours
+30°C	~ 30 minutes	~ 10 hours	~ 14 hours
+40°C	~ 20 minutes	~ 8 hours	~ 12 hours

Note:
[1] Only for inspection or for application of the next layer.
[2] Only for inspection, application of the next layer or placing of the hot poured asphalt by trucks. Not for permanent traffic.
Times are approximate and will be affected by changing ambient conditions.

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 should 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 / **j** type **sb**) is 550 / 500 g/l (Limits 2007 / 2010) for the ready to use product.
The maximum content of **Sikalastic®-822** is < 500 g/l VOC for the ready to use product.

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