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Sikalastic®-851

Spray applied waterproofing membrane

Product Description	Sikalastic®-851 is a two part, elastic, crack-bridging, rapid-curing polyurethane membrane. Sikalastic®-851 is for machine application only.
Uses	■ For use as a waterproofing membrane underneath asphalt on concrete bridge decks according ETAG 033 ■ 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 layer for car parks
Characteristics / Advantages	■ Excellent crack-bridging properties ■ Highly elastic waterproofing membrane ■ Contains no fillers ■ Low viscosity ■ Fast curing (application with 2-part hot spray equipment)
Tests	Test report according ETAG 033, as a liquid applied bridge deck waterproofing kit on concrete decks, issued by TU Graz, Austria, report No.:79625-4
Approval / Standards	

Product Data

Form

Appearance / Colours	ISO - Part A: Resin - Part B: Grey ~ca. RAL 7004	clear / brownish grey or yellowish
Packaging	Part A: Part B:	211 kg drum, 202 kg drum,

Storage

Storage Conditions / Shelf Life

Part A: 12 months
Part B: 12 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.

Technical Data

Chemical Base

Polyurethane

Density

Part A:	~ 1.08 kg/litre	
Part B:	~ 1.04 kg/litre	(DIN EN ISO 2811-1)
Mixed resin:	~ 1.00 kg/litre (cured film)	

All Density values at +23°C

Curing Speed /Rate

From +8°C to +45°C substrate temperature:

Start of setting phase after 5 - 10 seconds.

Solid Content

> 99%

Viscosity

Part A: ~ 2300 mPas at +20°C
Part B: ~ 2300 mPas at +20°C

Layer Thickness

Minimum 2 mm

Mechanical / Physical Properties

Tensile Strength

~ 11.0 N/mm^2 (28 days / +23°C) (DIN 53504)

Shore A Hardness

	at +8°C	at +23°C
After 1 hour	~ 81	~ 83
After 24 hours	~ 88	~ 88
After 28 days	~ 88	~ 88

Elongation at Break

~ 350% (28 days / +23°C) (DIN 53504)

Resistance

Chemical Resistance

Sikalastic®-851 is generally resistant to:

- De-icing salts
- Bitumen
- Alkalis

Thermal Resistance

Sikalastic®-851 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 car parks with mastic asphalt (hot poured asphalt):

Layer thickness:	≥ 2 mm
Primer:	1 - 2 x Sikafloor®-161, Lightly broadcast with quartz sand 0.3 - 0.8 mm
Waterproofing:	1 x Sikalastic®-851
Tack-coat:	1x Sika Concrete Primer broadcast with Sikalastic®-827 HT pellets
Asphalt:	Mastic Asphalt (hot rolled asphalt)

or

Primer:	1 - 2 x Sikafloor®-161, Lightly broadcast with quartz sand 0.3 - 0.8 mm
Waterproofing:	1 x Sikalastic®-851
Tack-coat:	1x Sikalastic®-823
Asphalt:	Mastic Asphalt (hot rolled asphalt)

System for car parks with asphalt concrete (hot rolled asphalt):

Layer thickness:	≥ 2 mm
Primer:	1 - 2 x Sikafloor®-161, Lightly broadcast with quartz sand 0.3 - 0.8 mm
Waterproofing:	1 x Sikalastic®-851
Tack-coat:	1x Sika® Concrete Primer broadcast with Sikalastic®-827 LT pellets
Asphalt:	Asphalt Concrete (hot rolled asphalt)

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

Application Details

Consumption / Dosage

Coating System	Product	Consumption
Bonding bridge (when exceeding the max. waiting time, e.g. overlaps)	1x Sikalastic®-810 + 15 wt.-% Thinner C (Between Sikalastic®-851 and Sikalastic®-851)	0.05 - 0.09 kg/m²
System for car park decks with mastic asphalt and hot melt pellets (hot poured asphalt)	1-2 x Sikafloor®-161, Lightly broadcast with quartz sand, 0.3 - 0.8 mm 1 x Sikalastic®-851 1 x Sika® Concrete Primer, Broadcast with 1 x Sikalastic®-827 HT pellets Mastic asphalt	0.35 - 0.5 kg/m²/layer 1.0 - 1.5 kg/m² ~ 1.00 kg/m²/mm 0.50 – 0.60 kg/m² 0.60 – 0.80 kg/m²
System for car park decks with mastic asphalt (hot poured asphalt)	1-2 x Sikafloor®-161, Lightly broadcast with quartz sand, 0.3 - 0.8 mm 1 x Sikalastic®-851 1 x Sikalastic® -823 Mastic asphalt	0.35 - 0.5 kg/m²/layer 1.0 - 1.5 kg/m² ~ 1.00 kg/m²/mm 0.07 – 0.09 kg/m²
System for car park decks with asphalt concrete (hot rolled asphalt)	1-2 x Sikafloor®-161, Lightly broadcast with quartz sand, 0.3 - 0.8 mm 1 x Sikalastic®-851 1 x Sika® Concrete Primer, Broadcast with 1 x Sikalastic®-827 LT pellets Hot rolled asphalt	0.35 - 0.5 kg/m²/layer 1.0 - 1.5 kg/m² ~ 1.00 kg/m²/mm 0.50 – 0.60 kg/m² 0.60 – 0.80 kg/m²

	These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level and wastage etc. For an optimal bonding between hot-rolled asphalt and waterproofing layer a minimum temperature of the asphalt of ≥ 140°C is required.
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. / +45°C max.
Ambient Temperature	+8°C min. / +45°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	Beware of condensation! The substrate and uncured membrane must be at least 3°C above dew point to reduce the risk of condensation or blooming of the membrane finish.

Application Instructions

Mixing	Part A : Part B = 1.04 : 1 (by weight) Part A : Part B = 1 : 1 (by volume) Dose and mix with suitable two-part spray equipment. Both components shall be heated up to +70C. The accuracy of mixing and dosage must be controlled regularly with the equipment.
Application Method / Tools	Prior to application, confirm substrate moisture content, r.h and dew point. *Primer:* Prime prepared concrete with Sikagard®-161. Sikagard®-161 should 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 applications. After each application lightly broadcast with quartz sand 0.3 - 0.8 mm. In order to avoid the formation of blisters do not broadcast to excess. *Levelling up:* Rough surfaces need to be leveled first. Use Sikagard®-161 leveling mortar (see the relevant PDS). *Waterproofing:* Spray apply with suitable two-part hot spray equipment. Possible suppliers of spray

equipment are Gama, Graco, Isotherm, WiWa, Reaku,…

Material temperature: +70°C

For more detailed application engineering information pls. refer to the appropriate method statement.

Bonding bridge (intermediate):
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

Waiting Time / Overcoating

Before applying Sikalastic®-851 on Sikafloor®-161 allow:

Substrate temperature	Minimum	Maximum
+10°C	24 hours	1 month [1])
+20°C	12 hours	
+30°C	8 hours	
+45°C	6 hours	

Before applying Sika® Concrete Primer or Sikalastic®-823 on Sikalastic®-851 allow:

Substrate temperature	Minimum	Maximum
+10°C	10 Min	3 hours [2])
+20°C		2 hours [2])
+30°C		2 hours [2])
+45°C		1 hour [2])

Before applying Sikalastic®-851 on Sikalastic®-851 allow:

Substrate temperature	Minimum	Maximum
+10°C	4 Min	3 hours [3])
+20°C		
+30°C		1 hour [3])
+45°C		

Before applying asphalt on Sika® Concrete Primer allow:

Substrate temperature	Minimum	Maximum
+10°C	4 hours	14 days [1])
+20°C	3 hours	
+30°C	3 hours	
+45°C	2 hours	

[1]) Assuming that any dirt has been carefully removed and contamination is avoided.

[2]) If the max. waiting time is exceeded then Sikalastic®-810 + 15 wt.-% Thinner C must be applied as a bonding bridge.

[3]) If the max. waiting time is exceeded then Sikalastic®-810 must be applied diluted with max. 20% Thinner C.

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

Notes on Application / Limitations

This product may only be used by experienced professionals.

Application is by 2-part hot spray equipment only.

Temperature of the substrate during application and curing: min. +5°C.

Sikalastic®-851 is not UV light resistant and changes colour under UV exposure. However, the performance and technical properties are not affected providing the exposure is max. 4 weeks. It is therefore advisable to overcoat Sikalastic®-851 with hot poured asphalt as early as possible. Areas not to be overlaid with asphalt and which are permanently exposed to UV light radiation, must be over coated with a

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suitable protective coating such as Sikafloor-359. 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.

Prior to placing the hot poured asphalt (mastic asphalt), a tack-coat Sikalastic®-823 has to be applied by brush, roller or spray.

Prior to placing the asphalt overlay a tack-coat has to be applied.

Please note: Always apply a test area first.

Curing Details

Applied Product ready for use

Temperature	Rain resistant after	Ready for foot[1)] traffic (carefully)	Ready for traffic[2)]
+10°C	~ 5 minutes	~ 8 minutes	~ 24 hours
+20°C		~ 5 minutes	~ 18 hours
+30°C		~ 4 minutes	~ 14 hours
+45°C		~ 4 minutes	~ 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 asphalt overlay 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 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 / **j** type **sb**) is 550 / 500 g/l (Limits 2007 / 2010) for the ready to use product.

The maximum content of **Sikalastic®-851** is < 500 g/l VOC for the ready to use product.

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