

Sikalastic®-841 ST

Liquid applied pure polyurea membrane

Construction

Product Description

Sikalastic®-841 ST is a two part, elastic, 100% solids, very fast curing pure polyurea liquid applied membrane with very good chemical resistance.
Sikalastic®-841 ST shall not be used in closed structures containing biogenic sulphuric acid
Sikalastic®-841 ST can only be spray applied with special two part hot spray equipment.

Uses

- For waterproofing applications and anticorrosion applications on concrete and many other substrates:
Typical uses:
- Protective coatings
- Tank coatings/linings
- Bridge Deck waterproofing
- Roof coatings
- Walkways and balconies
- Flooring and Car parking decks
- Industrial and manufacturing facilities
- Landscape and water containment
- Power plants
- Sewage and Waste Water Treatment plants
- Truck bed lining

Characteristics / Advantages

- Very fast reactivity and curing time
- Almost immediate return-to-service time
- Applicable in temperatures from -15°C to 70°C
- Performs in constant dry temperatures from -30°C to 100°C
- 100% solids with zero VOC
- Excellent crack-bridging properties
- Good chemical resistance
- Low yellowing
- Good abrasion resistance

Product Data

Form

Appearance / Colours

ISO - Part A: clear liquid
Resin - Part B: amber or grey liquid
Grey ~ RAL 7005 or un-pigmented (yellowish)

Packaging

Part A (net): 212,0 kg drum
Part B (net): 191,0 kg drum



Storage

Storage Conditions / Shelf Life

Part A: 18 months
Part B: 18 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

Pure Polyurea

Density

Part A: ~ 1.12 kg/litre
Part B: ~ 1.01 kg/litre
All Density values at +23°C

Gel Time

6 to 20 seconds

Tack Free Time

60 to 120 seconds

Post Cure Time

24 hours

Solid Content

> 99%

Viscosity

Part A: ~ 720 to 880 mPas
Part B: ~ 315 to 385 mPas

Mechanical / Physical Properties

Tensile Strength

> 15 N/mm²

DIN 53504

Shore D Hardness

~ 45 to 50

DIN 53505

Elongation at Break

375 to 425 %

DIN 53504

Abrasion Resistance

< 15 mg (CS 17/1000/1000)
~ 100 mg (H22/1000/1000)

EN ISO 5470-1

Crack bridging properties

Static: > 2500µm at +23°C, class A5
Dynamic: class B4.2 at -20°C

DIN EN 1062-7
BS EN 1504-2

Resistance

Chemical Resistance

Sikalastic®-841 ST is resistant to many chemicals. Please ask for a detailed chemical resistance table.

Thermal Resistance

Sikalastic®-841 ST performs in constant temperatures from -30°C to 100°C.

Application Details

Consumption / Dosage

Coating System	Product	Consumption
System for concrete structures	1-2 Sika® Concrete Primer or Sikafloor®-161, lightly broadcast with quartz sand, 0.3 - 0.8 mm 1 x Sikalastic®-841 ST	0.35 - 0.55 kg/m² per layer 1.0 - 1.5 kg/m² ~ 1.08 kg/m²/mm
Bridge Deck Waterproofing Deck Priming	2 x Sika® Concrete Primer, Lightly broadcast with quartz sand, 0.3 - 0.8 mm (into first coat)	0.35 - 0.55 kg/m² per layer 1.0 - 1.5 kg/m²
Membrane layer	1 x Sikalastic®-841 ST	~1.08 kg/m²/mm (min 2mm)
Tack Coat	1 x Sika® Concrete Primer Add 1% Extender T for slopes 1x Sikalastic®-827 LT	0.55 - 0.75 kg/m² 0.80-1.00 kg/m²
System on carbon steel	2 x SikaCor® EG 1 1 x Sikalastic®-841 ST	~ 0.22 kg/m² per layer ~ 1.08 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/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 Sikafloor®, SikaDur®, SikaScreed and Sika® Level 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.

Steel surfaces must be prepared by blast cleaning to Sa 2 ½ (ISO 8501-1) or SSPC-SP 10. All weld splatter has to be removed joints and welds must be grinded in accordance with EN 14879-1. An average surface profile $R_z \geq 50\mu\text{m}$ must be achieved, the substrate has to be free from contaminants detrimental to adhesion, preferably by high pressure water jetting prior of blast cleaning.

Application Conditions / Limitations

Substrate Temperature -15°C min. / +40°C max.

Ambient Temperature -15°C min. / +40°C max.

Relative Air Humidity 85% RH max.

Substrate Moisture Content

Sika® Concrete Primer
≤ 4% pbw moisture content.
Test method: Sika®-Tramex meter, CM - measurement or Oven-dry-method.
No rising moisture according to ASTM (Polyethylene-sheet)

Primer Sikafloor® 161
≤ 6% pbw moisture content.
Test method: Sika®-Tramex meter,
≤ 4% pbw moisture content.
Test method: CM - measurement or Oven-dry-method.
No rising moisture according to ASTM (Polyethylene-sheet)

Dew Point

Beware of condensation!
The substrate temperature must be at least 3°C above dew point to reduce the risk of de-lamination due to condensation.

Application Instructions

Mixing

Part A : Part B = 50 : 50 (by volume)

Dose and mix with suitable air driven or electrical two-part hot spray equipment.
Both components must be heated up to +70°C.
The accuracy of mixing and dosage must be controlled regularly with the equipment.

Sikalastic®-841 ST might not be diluted under any circumstances. Thoroughly mix Sikalastic®-841 ST part B resin material using a drum mixer until a homogenous mixture and colour is obtained.

Application Method / Tools

Prior to application, confirm substrate moisture content, r.h and dew point.

Primer:

Prime prepared concrete with Sikafloor®-161 or Sika® Concrete Primer. Primer 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. Broadcasting with quartz sand 0.3 - 0.8 mm is optional, e.g. for flooring applications where high shear resistance is required. In order to avoid the formation of blisters do not broadcast to excess.

Waterproofing:

Apply using a plural component, heated, high pressure, proportioning spray equipment as those manufactured by Graco® GlasCraft® Gusmer, Wiwa®, Gama® or any other equipment producer.

The proportioning equipment utilized must be capable of supplying correct pressure and heat for the appropriate hose length on a consistent basis.

Waterproofing membrane should be terminated into primed chase or terminated to a designated level via tape protection.

Lapping.

Where the new waterproofing membrane is to be joined to an existing Sikalastic® -841 ST waterproofing membrane and at day joints, the new application shall be lapped onto the existing membrane by a minimum of 50mm.

Where the existing waterproofing membrane is clean and less than 4 hours old no additional preparation is required.

Where the existing membrane is clean but over 4 hours old then Sikalastic 810 (thinned with 15% Sika Thinner C) or Sika® Concrete Primer shall be applied to give a margin of 20mm greater than the lap and allowed to dry

Where the existing cured waterproofing membrane is dirty or contaminated, the surface shall be first cleaned with Sika Thinner C and then Sikalastic 810 (thinned with 15% Sika Thinner C) shall be applied to give a margin of 20mm greater than the lap and allowed to dry.

Repair of defects / Pin / blow holes.

Within 4 hours of the waterproofing membrane application, identified pin / blow holes shall be over coated with Sikalastic 841 ST waterproofing membrane with an additional minimum film thickness of 2 mm.

After 4 hours of membrane application, the area over and around any pin / blow holes shall be cleaned using a suitable solvent, ensuring a minimum 150mm lap. The repair area shall be abraded and then Sikalastic 810 (thinned with 15% Sika Thinner C) applied.

The primer shall be allowed to dry and Sikalastic 841 ST waterproofing applied to a minimum of 2 mm ensuring a minimum peripheral lap of 100 mm around the repair. The membrane shall be allowed to cure prior to the application of the Sika Tack Coat System.

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®-841 ST on Sikafloor®-161 (with broadcasting) or SikaCor®EG 1 allow:

Substrate temperature	Minimum	Maximum
+10°C	24 hours	3 days ^{1,2)}
+20°C	20 hours	48 hours ^{1,2)}
+30°C	16 hours	24 hours ^{1,2)}
+40°C	14 hours	24 hours ^{1,2)}

Before applying Sikalastic®-841 ST on Sika® Concrete Primer allow:

Substrate temperature	Minimum	Maximum
+10°C	1 hours	24 hours ¹⁾³⁾
+20°C	30-45 minutes	
+30°C	30 minutes	
+40°C	10 minutes	

Before applying Sikalastic®-841 ST on Sikalastic®-841 ST allow:

Substrate temperature	Minimum	Maximum
+10°C	10 sec.	6 hours ²⁾
+20°C		5 hours ²⁾
+30°C		4 hours ²⁾
+40°C		3 hours ²⁾

Before applying Sika Concrete Primer on Sikalastic-841 ST

Substrate temperature	Minimum	Maximum
+10°C	10 sec.	6 month ²⁾
+20°C		5 month ²⁾
+30°C		4 month ²⁾
+40°C		

Notes on Application / Limitations

This product may only be used by experienced professionals.

For spray application the use of protective health & safety equipment is mandatory!

Application by using plural component, heated, high pressure, proportioning spray equipment. Temperature of the substrate during application and curing: min. -15°C.

Under direct UV-exposure Sikalastic®-841 ST will discolour and may exhibit some chalking tendencies, but the mechanical properties are not affected. Where colour stability is required an appropriate top coat has to be applied.

Please note: Always apply a test area first. Where the system is applied onto Bridge decks the full method statement must be followed in line with the BBA approval.

Curing Details

Applied Product ready for use

Temperature	Rain resistant after	Ready for foot ¹⁾ traffic (carefully)	Ready for traffic ^{2,3)}
+10°C	~ 2 minutes	~ 8 minutes	~ 90 minutes
+20°C		~ 5 minutes	~ 60 minutes
+30°C		~ 4 minutes	~ 45 minutes
+40°C		~ 3 minutes	~ 30 minutes

Note:

¹⁾ Only for inspection or for application of the next layer.

²⁾ Only for inspection, application of the next layer Not for permanent traffic.

³⁾ Rollers should not stand or travel on the membrane until finished layer or Hot rolled Asphalt has been applied. Where necessary use Vehicles with rubber tyres

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®-841 ST is < 500 g/l VOC for the ready to use product.
USGBC LEED Rating	Sikalastic®-841 ST conforms to the requirements of LEED EQ Credit 4.2: Low -Emitting Materials: Paints & Coatings SCAQMD Method 304-91 VOC Content < 100g/l


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