

PRODUCT DATA SHEET

Sikalastic®-835 I

Liquid hot spray applied 2-component pure polyurea membrane with high chemical and mechanical resistance

PRODUCT DESCRIPTION

Sikalastic®-835 I is a liquid hot spray applied, 2-component, elastic, 100% solids, very fast curing pure polyurea membrane. Sikalastic®-835 I can only be installed with special two part hot spray equipment.

USES

For roof waterproofing solutions in both new construction and refurbishment projects:

- Existing bituminous membranes
- Terraces
- Roof screeds

Coating for concrete protection according the requirements of EN 1504-2, for:

- Decks
- Bridges
- Tunnels

Metal and concrete water retaining structures:

- Dams
- Canals
- Tanks
- Safety tanks for petrochemical plants
- Pipelines
- Pool (waterproofing under the pool finish)
- Fountain (waterproofing under the top finish coat)

Waterproofing on roofs suitable for vehicle access and car park decks with concrete overburden.

Coatings for scenery and decorative structures.

CHARACTERISTICS / ADVANTAGES

- Very fast curing time
- Easy to detail, even when accessibility is limited
- Seamless roofing/waterproofing membrane
- Highly Elastic and Crack Bridging (>250%)
- High impact, abrasion and puncture resistance
- Good resistance to many chemicals
- Applicable in temperatures from 5°F(-15°C) to +158°F(+70°C)
- Performs in constant dry temperatures from -22°F(-30°C) to +284°F(+140°C)
- 100% Solids - Zero VOC
- Excellent anticorrosion protection
- Suitable for most substrates (concrete, metal, bituminous membrane, masonry and wood)

APPROVALS / STANDARDS

- Provided with CE-marking, according to EN1504-2.
- Reaction to Fire (EN13823): Class E
- Accelerated Weathering UV Test (ASTM G 53)
- Slip coefficient (B.C.R.A. Method - D.M. 14/06/1989 No.236 Art: 8.2.2)
- ASTM C836-18

PRODUCT INFORMATION

Chemical Base	Two part aromatic polyurea		
Packaging	Resin	55-gal (202.8L) 205 kg drums	
	Isocyanate	55-gal (202.8L) 225 kg drums	
	Resin + Isocyanate Kit	109-gals	
Color	Black (RAL9005)	Med. Grey (RAL7040)	
	White (RAL9010)	Other colors upon request	
Shelf Life	Resin	12 months from date of production	
	Isocyanate	12 months from date of production	
Storage Conditions	The product must be stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between 41°F (+5°C) and 86°F (+30°C). Higher storage temperatures may reduce shelf life of product. NOTE: Keep drums stored on pallets		
Density	Resin	~ 65.55 lb/ft3 (1.05 kg/l)	(EN ISO 2811-1)
	Isocyanate	~ 29.92 lb/ft3 (1.12 kg/l)	
	Resin + Isocyanate Mixed	~ 67.42 lb/ft3 (1.08 kg/l)	
	Density values determined at 77°F (+25°C)		
Volatile organic compound (VOC) content	0 g/L		
Viscosity	Resin	300 - 500 mPas	(EN ISO 3219)
	Isocyanate	500 - 800 mPas	
Viscosity values determined at 77°F (+25°C)			

TECHNICAL INFORMATION

Shore D Hardness	~ 48	(EN ISO 868)
Abrasion Resistance	~20 mg	(EN ISO 5470-1 - Taber Test: H22/1000/1000)
Tensile Strength	~12 MPa	(UNI EN 12311-2 Part B)
Elongation at Break	250% - 300%	(UNI EN 12311-2 Part B)
Tear Strength	~ 90 kN/m	(UNI EN 12310-2)
Crack Bridging Ability	Static	Class A5 at -10 C (>2.5mm)
	Dynamic	Class 4.1 at +23 C
Chemical Resistance	Sikalastic®-835 I is resistant to many chemicals (Test Method ASTM D1308 at 77°F (+25°C). It is also resistant to long-term contact with hydrocarbons (diesel and gasoline) for at least 72 hours. Resistant to ozone according to (UNI EN 1844:2013). Gas Permeability Tests: (UNI EN 1779 / UNI EN 1330-8)	
	Gas	Duration / Pressure
	Helium	40 d: 15'd / 1,2 bar
	Methane	40 d: 15'd / 1,2 bar
	Radon	40 d / ambient
		Result
		no leak
		no leak
		9 Bq/m ³

Simultaneous exposure to thermal and mechanical stress can reduce the chemical resistance of the product.

Artificial Ageing

Sikalastic®-835 I has been tested according to ASTM G53 (UVB-313 lamp / cycle 140°F (+60°C)).

Property	U.M.	Ref.	After 1700h	After 3200h
E Modulus @ 100%	MPa	6.5	7	7.16
E Modulus @ 300%	MPa	10	10.33	10.78
Tensile strength	MPa	12	13.18	14.34
Elongation at break	%	250	266	255
Tear strength	kN/m	90	93.44	107.98

Behavior after Artificial Weathering

Sikalastic®-835 I has been tested according to ASTM G53 (UVB-313 lamp / cycle 140°F (+60°C)).

Property	U.M.	Δ After 3000 h
Shore hardness	D	~ 4%
E Modulus	MPa	~ -17%
Tensile strength	MPa	~ 5%
Elongation at break	%	~ -20%
Tear strength	KN/m	~ 20%

Permeability to Water Vapor ~ 0.025 (ASTM E96))

Water Vapor Transmission <5 m (UNI EN 7783-1)

Thermal Conductivity 0,14 w/mK (EN12667:2002)

Service Temperature -22°F (-30°C) min. / 284°F (+140°C) max.

APPLICATION INFORMATION

Ambient Air Temperature 5°F (-15°C) min. / 158°F (+70°C) max.

Relative Air Humidity 85% U.R. max.

Dew Point Beware of condensation. The substrate temperature must be at least 5°F (3°C) above dew point to reduce the risk of condensation on the surface.

Substrate Temperature 5°F (-15°C) min. / 158°F (+70°C) max.

Substrate Moisture Content < 4% moisture content. Test method: Sika®-Tramex meter, CM - measurement or Oven-dry-method. No rising moisture according to ASTM 4263 (Polyethylene-sheet)

Waiting / Recoat Times

Before applying Sikalastic®-835 I on Sikalastic® EP Primer/Sealer or Sika® Concrete Primer Lo-VOC, allow:

Substrate Temperature	Minimum	Maximum
50°F (+10°C)	2 h	4 h
73°F (+23°C)	1 h	4 h
86°F (+30°C)	1 h	4 h

Before applying Sikalastic®-835 I on lightly broadcasted epoxy primers (Sikalastic® EP Primer/Sealer), allow:

Substrate Temperature	Minimum	Maximum
50°F (+10°C)	24 h	36 h
73°F (+23°C)	12 h	36 h
86°F (+30°C)	8 h	36 h

Before applying Sikalastic®-835 I on Sikalastic®-835 I allow:

Substrate Temperature	Minimum	Maximum
50°F (+10°C)	15 s	6 h
73°F (+23°C)	15 s	5 h
86°F (+30°C)	15 s	4 h

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

Test Results	Gel time	Foot traffic	Light traffic	Curing time
	~ 5 sec.	~ 15 min.	~ 8 h	~ 24 h

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

SYSTEM INFORMATION

System Structure	Coating System	Product	Consumption
	System for Concrete Structures	1-2 x Sikalastic® EP Primer/Sealer, lightly broadcasted with quartz sand, 0.4-0.7 mm or Sika® Concrete Primer Lo-VOC or Sikalastic® GDC Primer 1 x Sikalastic®-835 I	835 I ~ 20 ft²/gal, Resin + Isocyanate, mixed material (80 mils wft)
	System for Carbon Steel Structures	1 x Sikalastic® EP Primer/Sealer, lightly broadcast with quartz sand, 0.4-0.7 mm 1 x Sikalastic®-835 I	835 I ~ 20 ft²/gal, Resin + Isocyanate, mixed material (80 mils wft)
	Top Coat/UV Protection	1 x Sikalastic® 701SF	701 SF ~ 160 ft²/gal Part A + B mixed material (10-12 mils wft)

These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level and waste etc. During the design fase, the thickness of the Sikalastic®-835 I must be assessed considering: intended use, level of stress and expected durability.

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

LIMITATIONS

- This product may only be used by experienced professionals
- For spray application the use of protective health & safety equipment is mandatory. See the relative Safety Data Sheet to obtain more detailed information
- Only apply by using plural component, heated, high pressure, proportioning spray equipment
- Under direct UV-exposure Sikalastic®-835 I will discolor and may exhibit some chalking tendencies
- Do not apply Sikalastic®-835 I directly on TPO and plastified PVC

- Minimum age of concrete must be 28 days depending on curing and drying conditions
- Precautions should be taken to prevent odors and/or vapors from entering the building/structure, including but not limited to turning off and sealing air intake vents or other means of ingress during product application and cure
- Volatile bituminous materials may stain the coating. The use of proper primer avoids this phenomenon

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

APPLICATION INSTRUCTIONS

EQUIPMENT

Equipment needed:

- Proportioner / spray pump
 - Integral heaters
 - High pressure capacity
 - Activity log
- Heated hoses
- Spray gun
- Transfer pumps
- Agitator
- Gel filters
- Air compressor

SUBSTRATE PREPARATION

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
- Substrates 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
- Bituminous membranes must be clean, intact, continuous, with full adhesion to the substrate, dimensionally stable and free of reptation

The substrate preparation methods strictly depend on substrate type, conditions and stress level expected

Substrates which must always be primed are:

- Cementitious substrates (concrete, screeds, mortars, plasters, etc.) and bricks
- Tiles
- Metal

Cementitious Substrates, Bricks and Tiles

Must be prepared mechanically with suitable abrasion equipment to remove cement laitance, dust, loose and friable material and achieve an open textured surface. Weak material 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® range of repair materials. The surface has to be leveled in order to achieve an even surface without high spots.

The surface must be primed with appropriate Sika® primer. In case of particularly absorbent substrates which need to be consolidated, prime with Sikalastic® EP Primer/Sealer, lightly broadcast with quartz sand, 0.4-0.7 mm, before the application of Sikalastic®-835 I.

Metal

Metal surfaces must be prepared by blast cleaning to Sa 2 ½ (ISO 8501-1) or SSPC-SP 10 or 11. The substrate has to be free from contaminants detrimental to adhesion, preferably by high pressure water spray, prior of blast

cleaning. The surface must be coated with Sikalastic® EP Primer/Sealer, then apply the preformed strip sealant Sika® Joint Tape SA along joints, cracks or spots (eg. mechanical fasteners).

Bituminous Membrane

Cracks or damages of the membrane have to be repaired with like in kind repair products. The surface must then be thoroughly cleaned by high pressure water spray. Once the surface is dry, the required primer may be applied.

SURFACE PREPARATION

Substrate Pre-Treatment

Refer to Priming Guide to select primer for properly evaluated and prepared substrate. Refer to separate primer Product Data Sheet for application methods, coverage rates, cure times and recoat windows. Always allow primer to cure thoroughly before applying detail or base resin layer.

Sikalastic® -835i Priming Guide Substrates and Primer Options

Concrete *1

Sikalastic® Concrete Primer Lo-VOC

Sikalastic® GDC Primer

Sikalastic® EP Primer/Sealer

Structural Concrete *1

Sikalastic® Concrete Primer Lo-VOC

Sikalastic® GDC Primer

Sikalastic® EP Primer/Sealer

Cement, Gypsum Based Roof Boards

Sikalastic® Concrete Primer Lo-VOC

Sikalastic® EP Primer/Sealer

Brick, Stone *3

Sikalastic® Concrete Primer Lo-VOC

Sikalastic® EP Primer/Sealer

Bituminous Substrate Asphalt, Bituminous Felts, Bituminous Coatings, Granulated or Smooth SBS & Aged APP Cap Sheets *2,3

Sikalastic® EP Primer/Sealer

Single Ply PVC Membranes *3 Sarnafil, Sikaplan *3

Sikalastic® EP Primer/Sealer

Roof tiles (unglazed) *3,4

Sikalastic® EP Primer/Sealer

Fiberglass *3

Sikalastic® EP Primer/Sealer

Polyurethane Foam - Sprayed or Slab Stock

Sikalastic® EP Primer/Sealer

Metal *3 Aluminium, Galvanized, Cast Iron, Copper, Lead, Brass, Stainless Steel, Steel, Zinc

Sikalastic® EP Primer/Sealer

Pre-Coated Metal *3 Paints & Coatings *3 Aluminized Solar Reflective Coatings *3

Sikalastic® EP Primer/Sealer

Wood - Timber & Plywood *5

Sikalastic® EP Primer/Sealer

* Consult Sika

1 New cementitious substrates must be Portland base

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and be cured min. 28 days.

2 The presence of volatile bitumen may cause discoloration of Sikalastic® if not properly primed.

3 Surface evaluation and field adhesion testing.

4 Glazed tile consult Sika.

5 Pressure treated lumber consult Sika

MIXING

- 1:1 fixed mixing ratio (for PUA)
- Premix the resin 30 minutes, keep mixing while preheating both components to at least 105° F in the drums
- Transfer pumps must reach all the way to the bottom of the drums
- First heat up the hose and once hose is up to temperature, turn on the primary heaters and allow to come up to set point temperature 160°F
- Pressurize the system (2200 - 2500 PSI) and maintain the pressure balance between ISO and resin

APPLICATION

- Apply Sikalastic®-835 I, using a plural component, heated, high pressure, proportioning spray equipment. The proportioning equipment utilized must be capable of supplying correct pressure and heat for the appropriate hose length on a consistent basis
- Both components must be heated up; 105°F in the drum and 160°F in the hose. The recirculation system should be activated during the preliminary drum heating
- The correct mixing ratio is: 1:1 by volume. The accuracy of mixing and dosage must be controlled regularly with the equipment
- Thoroughly mix Sikalastic®-835 I pigmented resin using a low speed drum mixer until a homogenous mixture and color is obtained. Continue to mix throughout application to maintain the homogenous mixture and color
- Isocyanate, it is recommended to use a suitable drier filter in order to protect this component from the humidity
- **Beware:** on highly absorbent substrates, in order to avoid blowholes and voids on the surface of the product (just sprayed), it is recommended to apply epoxy primers such as Sikalastic® EP Primer/Sealer in multiple layers until the surface porosity is filled. Lightly broadcast the primer with clean and dry quartz sand, 0.4 - 0.7 mm. Do not blind the primer
- Apply suitable systems to seal dynamic joints, connections and cracks. Please contact our Technical Service for more detailed information

OTHER RESTRICTIONS

See Legal Disclaimer.

LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

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