BUILDING TRUST

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 intalled 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

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)

PRODUCT INFORMATION

Chemical Base	Two part aromatic polyurea		
Packaging	Part A (resin)	55-gal (202.8L) 205 kg black drums	
	Part B (Isocyanate)	55-gal (202.8L) 225 kg red drums	
	A+B Kit	109-gals	
Color	Black (RAL9005) White (RAL9010	Med. Grey (RAL7040) Other colors upon request	
Shelf Life	Part A (resin)	12 months from date of production	
	Part B (Isocyanate)	12 months from date of production	
Storage Conditions	The product must be stored properly in original, unopend 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.		
Density	Part A	~ 65.55 lb/ft3 (1.05 kg/l)	(EN ISO 2811-1)
	Part B	~ 29.92 lb/ft3 (1.12 kg/l)	
	A + B 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	Part A	300 - 500 mPas	(EN ISO 3219)
	Part B	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	(> 1250 µm, class A4 73.4°F (+23°C)
	Dynamic	Class B3.1 -4°F (-20°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) fot 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	Result
Helium	40 d: 15'd / 1,2 bar	no leak
Methane	40 d: 15'd / 1,2 bar	no leak
Radon	40 d /ambient	9 Bq/m³

Simultaneous exposition 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 37°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% pbw moisture content. Test method: Sika®-Tramex meter, CM - measurement or Oven-dry-method. No rising moisture according to ASTM 4263 (Polyethylene-sheet).
For high moisture content substrates apply Sikafloor EpoCem® as a Temporary Moisture Barrier (TMB) system.

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	Sikalastic 835i 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	~ 20 ft²/gal, Part A + B, 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	~ 20 ft²/gal, Part A + B, mixed material (80 mils wft)
Top Coat/UV Protection	1 x Sikalastic® 701SF	~ 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 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

- Premix the resin only at least 30 minutes and then preheat both components to at least 15 – 25˚C (60 – 75˚F).
- 1:1 fixed mixing ratio (for PUA).
- First heat up the hose and once hose is up to temperature, turn on the primary heaters and allow to come up set point temperature (above 70˚C / 160˚F).
- Pressurize the system (170 – 200 bar / 2500-2900 PSI) and maintain the pressure balance (max. 10%) between ISO and resin.

APPLICATION

- Apply Sikalastic® 835i 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 to 140°F(+60C) to 176°F(+80°C), both in drum and hose. The recirculation system should be activated during the preliminary drums 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 part A pigmented resin using a low speed drum mixer until a homogenous mixture and color is obtained
- For part B (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.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product’s shelf life. User determines suitability of product for intended use and assumes all risks. User’s and/or buyer’s sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

Sale of SIKA products are subject to the Terms and

Conditions of Sale which are available at
https://usa.sika.com/en/group/SikaCorp/termsandconditions.html
or by calling 1-800-933-7452.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: +1-800-933-7452
Fax: +1-201-933-6225
usa.sika.com