

PRODUCT DATA SHEET

Sikalastic®-646 Lo-VOC

SINGLE COMPONENT, LOW-VOC, LOW-ODOR POLYURETHANE ROOF COATING.

PRODUCT DESCRIPTION

Sikalastic®-646 Lo-VOC is a cold liquid-applied, highly elastic, aliphatic, single-component, low odor, low VOC moisture-triggered polyurethane resin designed for easy application as part of Sikalastic® RoofCoat roofing systems.

USES

- Roof Recover
- Roof Maintenance
- Emergency Roof Repair
- Roof Walkway

CHARACTERISTICS / ADVANTAGES

- Sikalastic Polyurethane technology has an over 30 year track record
- Moisture triggered chemistry that is rapidly weatherproof after application
- Single component - no mixing and ready to use
- Low VOC, low odor
- Highly elastic and crack bridging
- Seamless and fully adhered
- Vapor permeable
- UV resistant and non-yellowing

PRODUCT INFORMATION

Packaging	5 gal. (19 L) pail	
Color	White, Steel Gray, Mushroom, Custom colors available with minimum order quantity.	
Shelf Life	12 months in original, unopened container.	
Storage Conditions	Store dry between 35 °F and 77 °F (2–25 °C). Condition material to 50–77 °F (10–25 °C) before using for ease of application.	
Density	11.9 lb./gal. (1.4 kg/cm ³)	
Solid content by volume	89 %	ASTM D-2697
Volatile organic compound (VOC) content	38 g/l	ASTM D-2369-81

TECHNICAL INFORMATION

Tensile Strength	700 PSI	ASTM D412
Elongation at Break	250%	ASTM D412
Tear Strength	70 lbf/in	ASTM D624
Resistance to Static Puncture	55 lb/f	ASTM D5602
Chemical Resistance	Most common roofing contaminants, oils, grease, dilute acids and bases.	
Solar Reflectance	0.88 (white - RAL 9016) Initial Rating	ASTM C-1549
Solar Reflectance Index	108 Initial	ASTM E-1980
Service Temperature	-22 – 176 °F (-30 – 80 °C) intermittent.	

SYSTEM INFORMATION

System Structure	Layer	RoofCoat 10	RoofCoat 15	RoofCoat 20
	Primer	See Priming Guide	See Priming Guide	See Priming Guide
	Coating WFT	25 mils wet (~1.6 gal/100 SF)	35 mils wet (~2.2 gal/100 SF)	40 mils wet (~2.5 gal/100 SF)
	Coating DFT	~22 mils dry	~31 mils dry	~36 mils dry
<p>Localized Reinforcement: Sika® Flexitape Heavy embedded in 25-35 wet mils of Sikalastic®-646 Lo-VOC or Sika® Joint Tape SA centered over seams, transitions and properly treated cracks and joints.</p> <p>Note: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique.</p>				
Ambient Air Temperature	41 - 95 °F (5 - 35 °C)			
Relative Air Humidity	80 % R.H. max.			
Substrate Temperature	41 - 140°F (5 - 60°C)			
Dew Point	Beware of condensation. The substrate and uncured coating must be ≥ 5 °F (3 °C) above dew point.			
Substrate Moisture Content	≤ 4 % moisture content as measured with a Tramex Moisture Meter. No rising moisture according to ASTM (Polyethylene-sheet). If moisture content is above 4 %, use Sikalastic-GDC Primer.			
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®-646 Lo-VOC Priming Guide

Substrate	Primer options
Concrete ¹	Sikalastic® Concrete Primer Lo-VOC Sikalastic® EP Primer/Sealer / Rapid Sikalastic® GDC Primer
Brick, stone ^{3,4}	Sikalastic® Concrete Primer Lo-VOC Sikalastic® EP Primer/Sealer / Rapid Sikalastic® EP Primer/Sealer / Rapid
Bituminous substrates: Asphalt, bituminous felts, bituminous coatings, granulated or smooth SBS cap sheets ^{2,3}	Sikalastic® EP Primer/Sealer / Rapid
Metal: Aluminum, galvanized, cast iron, copper, lead, brass, stainless steel, steel, zinc ³	Sikalastic® EP Primer/Sealer / Rapid
Paints, coatings, pre-coated metal, aluminized solar reflective coatings ^{3,4}	Sikalastic® EP Primer/Sealer / Rapid
PVC ^{3,5}	Sikalastic® EP Primer/Sealer
TPO ^{3,5}	Sikalastic EPDM Primer
EPDM ^{3,6}	Sikalastic EPDM Primer

¹ New cementitious substrates must be Portland Cement-based and be cured a min. 28 days and a min. 2500 psi compressive strength. Sikalastic GDC Primer may be used on green concrete, see data sheet for more information.

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

³ Surface evaluation and field adhesion testing.

⁴ Consult Sika Rep.

⁵ New PVC and TPO may have a protective lacquer from manufacturing and would need to be removed.

⁶ EPDM may require a rinse to remove deterioration before priming.

Pot Life

In opened containers, the material will form a film after 1–2 hours approx. at 75 °F (24°C) and 50 % R.H.

Waiting / Recoat Times

Ambient conditions	Minimum waiting time overcoating
+40 °F / 50 % r.h.	18 hours
+50 °F / 50 % r.h.	8 hours
+70 °F / 50 % r.h.	6 hours

*After 7 days the surface must be cleaned and primed with Sika® Reactivation Primer before continuing.

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

Applied Product Ready for Use

Ambient conditions	Rain resistant	Touch dry	Full cure
+40 °F / 50 % r.h.	1 hour	12 hours	24 hours
+50 °F / 50 % r.h.	1 hour	6 hours	18–24 hours
+70 °F / 50 % r.h.	1 hour	4 hours	12–18 hours

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

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

- Minimum age of concrete must be 28 days depending on curing and drying conditions.
- Do not thin with solvents.
- Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect material with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements.
- Do not apply to substrate surfaces where moisture vapor transmission will occur during application and cure. This condition may be checked using ASTM D 4263 (Polyethylene sheet method).
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather, as there is the potential for bonding problems.
- On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If applied during rising temperature pinholing or blistering may occur.
- Use sunglasses with UV filter when applying highly reflective Sikalastic®-646 Lo-VOC White (RAL 9016).
- Do not use for indoor applications unless sufficient air flow and ventilation are provided to prevent odors and/or vapors from leaving the immediate work area.
- 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 for odors and/or vapors into the building/structure during product application and cure.
- For areas with direct exposure to heavy or frequent foot traffic, an additional wear coat protection with slip resistant aggregate is required. Opening to traffic prior to cure may result in loss of aggregate or permanent staining and subsequent premature failure.
- Do not apply cementitious products, such as tile mortar directly onto Sikalastic®-646 Lo-VOC. See Sikalastic®-644 Lo VOC Product Data Sheet.
- Any repairs required to achieve a level surface with proper slope to drain must be performed prior to application (consult a Sika representative for guidance on various product solutions). Surface irregularities may reflect through the cured system.
- When applying over existing coatings or membranes, documentation of compatibility and adhesion testing is required.
- Opening to traffic prior to cure may result in loss of aggregate or permanent staining and subsequent premature failure.
- On grade concrete decks should not be coated with Sikalastic®-646 Lo-VOC.
- Unvented metal pan, split/sandwich slab with encapsulated membrane and/or insulation, cinder fill decks, and lightweight insulating concrete deck overlays should not be covered with Sikalastic®-646 Lo-VOC without additional deck evaluation and

- subsequent approval by Sika Technical Services.
- Do not subject to continuous immersion, i.e., fountains, ponds, pools, or interior of tanks.
- Not recommended for use over ceramic tile.

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

SUBSTRATE PREPARATION

Substrate Evaluation and Preparation

All substrate surfaces shall be clean, dry, and sound. Acceptable substrates include: sound concrete, metals, wood, modified bitumen, mineralized felt, EPDM, Hypalon, TPO, sprayed polyurethane foam, brick and stone, and existing liquid applied membranes.

Concrete and cementitious substrates

Cementitious or mineral based substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and to achieve an open textured surface (CSP 2-4 per ICRI guidelines). Loose friable material and weak concrete must be completely removed and surface defects such as voids must be fully exposed.

Repairs to the substrate, filling of joints, voids, and surface leveling must be carried out. Consult Sika for product recommendations based on project requirements. High spots must be removed by grinding or similar method. Outgassing is a naturally occurring phenomenon of concrete that can produce pinholes in liquid-applied materials. The concrete must be carefully assessed for moisture content, air entrapment, and surface finish prior to any roofing work. Particular requirements for priming must also be considered. Installing the primer and membrane either when the concrete temperature is falling or stable can reduce outgassing. It is generally beneficial, therefore, to apply the primer and embedment coat in the late afternoon or evening.

Gypsum and Cement-based sheathing

Sheathing boards shall be clean, dry, and dust-free, and shall be properly secured to the structure. Loose, damaged, or contaminated boards shall be removed and replaced.

Brick and stone

Mortar joints must be sound and preferably flush pointed. Power wash and use biodegradable non-susding detergent with clean water rinse as required.

Asphalt

Asphalt contains volatiles which can cause bleeding and slight non-detrimental staining. The asphalt must be carefully assessed for moisture and/or air entrapment, grade, and surface finish. Power wash and use biodegradable non-sudsing detergent with clean water rinse as required. All major cracks should be sealed to allow continuity of the Sikalastic® RoofPro system.

Bituminous felt

Ensure that bituminous felt is firmly adhered or mechanically fixed to the substrate. Bituminous felt shall not contain badly degraded areas.

Bituminous coatings

Remove any loose or degraded coatings. Bituminous coatings shall not have sticky or mobile surfaces, volatile mastic coatings, or old coal tar coatings. Power wash and use biodegradable non-sudsing detergent with clean water rinse as required. Treat blisters by star cutting and removing any underlying water. Allow to dry and re-adhere using suitable adhesive.

Metals

Metals must be in sound condition. Ferrous metals should be thoroughly cleaned by grinding or blast cleaning prior to priming (SSPC-SP3 to near-white metal). Non-ferrous metals are prepared by removing any deposits of dust and oxidation and abrading to bright metal. Wire brushing can be used for soft metal such as lead. The surface must be clean and free from grease which, if present, must be removed with a solvent wipe or wash with detergent, rinse and dry.

Paints and coatings

Ensure the existing material is sound and firmly adhered.

Existing Sikalastic® RoofPro Systems

The existing Sikalastic® RoofPro System shall be soundly adhered to the substrate. Clean the membrane using a water jet at approximately 140bar (2000 psi) and biodegradable non-sudsing detergent with a clean water rinse. Allow the membrane surface to dry.

Wooden substrates

Timber and timber based roof decks require additional reinforcement such as the installation of plywood, approved insulation, or cover board. Small timber protrusions and suitable decks may be treated directly, provided that the timber is of exterior quality, e.g. plywood. Fill joints flush with Sikaflex® sealant.

Paints/Coatings

Remove any loose or degraded coatings. Ensure the surface is clean and free from grease.

Sikaplan®/Sarnafil® membranes

Clean membranes with Sarna® Cleaner (PVC membranes) and Sarnafil® T Clean (TPO membranes) prior to application of primer.

Primer

Use the chart above for a suitable primer for each substrate. Follow the instructions in the primer product data sheet. Allow the primer to cure completely before applying Sikalastic®-646 Lo-VOC.

APPLICATION

Detailing

Non-structural cracks up to 1/16" - Detail application not necessary. Apply base coat per below.

Non-structural cracks between 1/16" and 1/4" - Rout and seal with Sikaflex®-11 FC sealant. Allow Sikaflex®-11 FC to skin over. Apply 30-35 mil resin layer embedding 3" Sika Flexitape Heavy centered over the crack. Alternatively, allow Sikaflex®-11 FC to cure then apply Sika® Joint Tape SA can be applied center other the crack. Apply base coat per below.

Metal seams, plywood/coverboard joints - Apply 30-35 mil resin layer embedding 3 or 6" Sika® Flexitape Heavy centered over seams. Alternatively, Sika® Joint Tape SA can be applied centered over seams. Apply base coat per below.

Transitions between dissimilar materials - Apply appropriate primer for each substrate as indicated in the primer chart above. Apply 30-35 mil of Sikalastic®-646 Lo-VOC embedding 6" Sika® Flexitape Heavy centered over the edge. Apply base coat per below.

Vertical to Horizontal Transitions - Apply appropriate primer for each substrate as indicated in the primer chart above. Apply a 1/2" cant bead of Sikaflex®-11 FC at the transition from horizontal to vertical. Allow Sikaflex®-11 FC to skin over. Apply 30-35 mil resin layer embedding 6" Sika® Flexitape Heavy centered over the cant bead. Alternatively, allow Sikaflex®-11 FC to cure then apply Sika® Joint Tape SA can be applied centered over the cant bead. Apply base coat per below.

Applying Base Coat and Top Coat

Mixing not required. Apply Sikalastic®-646 Lo-VOC at the coverage rate indicated above to achieve the

intended/specified RoofCoat System. Resin can be applied with a 1/2" nap phenolic resin core roller, squeegee or airless spray pump. Allow base coat to cure through before applying the top coat. Use the overcoat chart above as a guide for approximate cure times for various climate conditions. Keep base coat clean and dry then apply the top coat resin layer within 7 days. If the window is exceeded clean with non-sudsing detergent and clean water rinse, and allow to dry then apply Sika® Reactivation Primer. Top coats can be applied by the same means as the base coat. Apply at the coverage rate indicated above to achieve the intended/specified RoofCoat System. Sika recommends using a different color for the base and top coats for quality control.

Seed and Back Roll Option

The Seed and Backroll option is primarily intended for use for maintenance traffic-type, roof walkway applications where enhanced slip resistance is required. Apply Sikalastic®-646 Lo-VOC resin at 15 mils wet film thickness to an installed, cured membrane system. While the supplemental resin application is still wet seed with kiln-dried, iron-free aggregate. Back roll the surface to encapsulate the aggregate in the Sikalastic®-646 Lo-VOC resin.

Full Broadcast and Seal Option

The Full Broadcast and Seal option is intended for use for applications where both enhanced slip resistance and physical protection of the roofing membrane is required. Apply Sikalastic®-646 Lo-VOC resin at 15 mils wet film thickness to an installed, cured membrane system. While the supplemental resin application is still wet broadcast to rejection (full broadcast, beach) with kiln-dried, iron-free aggregate. Remove excess aggregate after cure. Seal with an additional 15 mil coat of Sikalastic®-646 Lo-VOC if desired.

CLEANING OF TOOLS

Clean all tools and application equipment with appropriate solvent immediately after use. Hardened and/or cured material can only be removed mechanically.

OTHER RESTRICTIONS

See Legal Disclaimer.

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

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Product Data Sheet

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