Product Data Sheet
Edition 2.09.2016
Sikalastic 601 BC and Sikalastic 621 TC
Roofing and Waterproofing System

Construction

Sikalastic® 601 BC (US) / 621 TC (US)
Roofing and Waterproofing System

Liquid-applied single component saturating resin with fiberglass or polyester reinforcement

Description

Sikalastic 601 BC (US) and 621 TC (US) roofing and waterproofing systems combine cold applied, aliphatic, single component, moisture-triggered polyurethane resins with fiberglass mat or polyester fleece reinforcement to create a seamless membrane and flashing system. System components are:

Sika or Sikalastic Primer - Select primer per substrate material in accordance with Priming Guide
Sikalastic 601 BC (US) - Base layer resin used for RoofPro 10 and 15 year systems with Reemat fiberglass reinforcement
Sikalastic 621 TC (US) - Top layer resin used for RoofPro 10 and 15 year systems with Reemat fiberglass reinforcement. Resin used for all other systems with both Reemat fiberglass and polyester fleece reinforcement
Sikalastic Reemat Premium - Chopped strand fiberglass mat
Sika Fleece 120, 140, 170 - Non-woven, needle-punched polyester fleece in various weights

Where to Use

Sikalastic RoofPro systems, including Sikalastic RoofPro Built Up, Direct, Plaza Deck/PMA, and Vegetated systems for both new construction and refurbishment

- Ideal for roofs displaying complex details and geometry or when accessibility is limited
- Effective and cost efficient life cycle extension of existing roofs
- Highly reflective Sikalastic 621 TC (US) in White (RAL 9016) suitable for cool roofs and solar roof assemblies.
- Suitable for use for applications such as balconies, terraces, walkways, plazas, and similar applications exposed to foot traffic when provided with a supplemental aggregated or flake surfacing.
- Sound concrete and cementitious screed, metals, wood, modified bitumen, mineralized felt, EPDM, hypalon, TPO, sprayed polyurethane foam, brick and stone, and existing liquid applied membranes.

Typical Data *(Material and curing conditions @ 73°F (23°C) and 50% R.H.)*

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	9 months for Sikalastic 621 TC and 9 months for Sikalastic 601 BC from date of production if stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between 40 -77° F (4-25°C).
Storage	Store dry at 35-77°F (2-25°C)
Product Conditioning	Condition material to 50-77°F (10-25°C) before using
Chemical Base	Single component, moisture-triggered, aliphatic polyurethane
Density (all values at +23 degrees C)	
601 BC (US)	11.35 lbs/gal (1.36 lg/l)
621 TC (US)	12.0 lbs/gal (1.44 kg/l)
Solids Content	
601 BC (US)	78.0 % by volume / 84.3 % by weight
621 TC (US)	81.3% by volume / 87.4% by weight
Flash Point	
601 BC (US)	138°F (59°C)
621 TC (US)	144°F (62°C)
VOC	
601 BC (US)	212 g/L
621 TC (US)	183 g/L
Service Temperature	-22 to 176°F (-30 - 80°C) intermittent
621 TC (US) White (RAL 9016)	
Solar Reflectance (Initial)	0.88 (ASTM C1549)
SRI (Solar Reflectance Index - Initial)	110 (ASTM E1980)

Physical Properties – Typical Values	ASTM Test Method	RoofPro 20	RoofPro 20
Reinforcement	-----	Reemat Premium	Sika Fleece 140
Breaking Strength, psi	D751 Proc. B	1030	900
Elongation to Break, %	D751	21	82
Tear Strength, lbf/in	D624	300	200
Static Puncture Resistance	D5602	>55 lbf	>55 lbf
Note: Data for other RoofPro assemblies available upon request			

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Advantages	■ Proven technology with over 25 year track record ■ Single component - no mixing and ready to use ■ Fully reinforced with highly conformable Sika Reemat or Sika Fleece ■ Moisture triggered chemistry that is rapidly weatherproof after application ■ Highly elastic and crack bridging ■ Seamless and fully adhered ■ Vapor permeable ■ UV resistant and non-yellowing ■ Abrasion and chemical resistant
Approvals	FM Approval Standard 4470 for Class 1 Roof Covers ■ ASTM E-108-00 Spread of Flame meets Class A at a slope of 1 in 12 ■ Simulated wind uplift pull testing meets up to Class 1-990 ■ Simulated hail damage testing meets rating of SH - Severe Hail Miami-Dade County NOA for Roof Systems over Concrete and Steel Decks USGBC LEED rating: Conforms to LEED SS Credit 7.2 for Heat Island Effect - Roof with SRI >/=78 Energy Star approval for Sikalastic 621 TC (US) White (RAL 9016) Meets ASTM D7311-07: Standard Specification for Liquid-Applied, Single-Pack, Moisture-Triggered, Aliphatic Polyurethane Roofing Membrane.
Coverage	See Application below
Cure Mechanism	Moisture-triggered
Chemical Resistance	Strong resistance to a wide range of reagents, including paraffin, petrol, fuel oil, white spirit, acid rain, detergents and moderate solutions of acids and alkalis. Some low molecular weight alcohols can soften the material. Contact Technical Service for specific recommendations. Salt spray to ASTM B117 (1000 hours continuous exposure) and prohesion testing to ASTM G85-94: Annex A5 (1000 hours cyclic exposure)
Packaging	5 gal. pails
Colors	601 BC (US) Oxide red 621 TC (US) White (RAL 9016), Pearl Gray, Steel Gray, Mushroom, Copper Green; custom colors available with minimum order

How to Use

Surface Preparation See Application below

Application

Substrate Evaluation

Concrete and cementitious substrates
New concrete shall be allowed to cure a minimum of 28 days. Concrete shall have a minimum compressive strength of 20.7 MPa (3000 psi) and exhibit a minimum tensile bond strength of 1.4 MPa (200 psi). time. Moist or sheet curing methods should be used, as opposed to the use of curing compounds, which may interfere with the bond of the membrane. Inspect the concrete, including upstands, and all areas should be hammer tested. Concrete must be suitably finished, preferably by wood float or steel pan. A power float finish is acceptable where the surface is prepared to avoid laitance (a tamped finish is not acceptable). The surface finish must be uniform and free from defects such as laitance, voids or honeycombing.

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.

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.

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
Bituminous coatings shall not have sticky or mobile surfaces, volatile mastic coatings, or old coal tar coatings.

Metals
Metals must be in sound condition.

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Wooden substrates
Plywood and timber based roof decks must be in good condition, firmly adhered and mechanically fixed. All plywood should be identified as conforming to PS 1 for construction and industrial plywood by grade, APA (American Plywood Association) trademark, or equivalent. For maximum smoothness, EXT Type APA, Grade A-C should be used, and the “A” side should be positioned to receive the Sikalastic resin.

Plywood decks to receive resin directly shall be at least 1/2 inch thick and attached and supported according to APA guidelines, using only non-rusting screw, spiral or coated nail type fasteners. A good practice would be to recess or counter sink fasteners 1/8 to 1/4 inch and fill with Sikaflex sealant. Suitable edge support to prevent differential deflection between panels shall be provided. Panel edges shall be tongue and groove or supported on solid blocking. Space panels 1/8 to 3/16 inch at panel ends.

Paints and coatings
Ensure the existing material is sound and firmly adhered.

Existing Sikalastic RoofPro System
The existing Sikalastic RoofPro System shall be soundly adhered to the substrate.

Surface Preparation

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 3-5 per ICRI guidelines). Loose friable material and weak concrete must be completely removed and surface defects such as blowholes and voids must be fully exposed. The amount of embedment coat required may increase over rough or highly porous surfaces.

Repairs to the substrate, filling of joints, blowholes/voids and surface levelling 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/waterproofing 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. Secure loose boards if in sound condition. Damaged or contaminated boards shall be removed and replaced.

Brick and stone
Power wash and use biodegradeable non-sudsing detergent with clean water rinse as required.

Asphalt
Power wash and use biodegradeable 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
Power wash and use biodegradeable 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.

Bituminous coatings
Remove any loose or degraded coatings.

Metals
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.

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.

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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 (FPO membranes) prior to application of primer.

Existing Sikalastic RoofPro Systems
Clean the membrane using a water jet at approximately 140bar (2000 psi) and biodegradeable non-sudsing detergent with clean water rinse. Allow to dry.

Priming

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 RoofPro Priming Guide

Substrate	Remark	CONCRETE PRIMER	DTE EPOXY Primer	Bonding Primer	EP PRIMER/ SEALER	Consult Sika
CONCRETE	(1)	▲	▲	▲	▲	
LIGHTWEIGHT STRUCTURAL CONCRETE	(1)		▲			▲
GYPSUM BASED ROOF BOARDS		▲		▲		
BRICK, STONE	(3)			▲		▲
BITUMINOUS SUBSTRATE						
-asphalt, bituminous felts, bituminous coatings, granulated or smooth SBS & APP cap sheets	(2,3)				▲	
SINGLE PLY ROOFING MEMBRANES						
-HYPALON, TPO, EPDM, PVC	(3)					▲
ROOF TILES (UNGLAZED)	(3,4)			▲		▲
POLYESTER (GLASS FIBER REINFORCED)	(3)			▲		▲
POLYURETHANE FOAM- sprayed or slab stock				▲	▲	
METALS						
-aluminum, galvanized, cast iron, copper, lead, brass, stainless steel, steel, zinc	(3)				▲	
PRE-COATED METAL	(3)					▲
PAINTS						
- paints & coatings	(3)			▲		
- aluminized solar reflective coatings	(3)				▲	
WOOD - TIMBER & PLYWOOD	(5)			▲	▲	▲

(1) New cementitious substrates must be Portland base and be cured min. 14 days.
(2) The presence of volatiles may cause discoloration of Sikalastic if not properly primed.
(3) Surface evaulation and field adhesion testing.
(4) Glazed tile consult Sika.
(5) Pressure treated lumber consult Sika

Detailing

Non-structural cracks up to 1/16 inch- Detail application not necessary. Apply embedment/base resin layer per below.

Non-structural cracks between 1/16 inch and 1/4 inch- Rout and seal with Sikaflex sealant. Apply 40-45 mil resin layer embedded with 3 inch Sika Flexitape Heavy centered over crack. Apply embedment/base resin layer per below.

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Cracks and joints between 1/4 inch and 1 inch- Rout and seal with Sikaflex sealant. Apply bond breaker tape sufficient to span width of crack or joint followed by 40-45 mil resin layer embedded with 6 inch Sika Flexitape Heavy centered over crack or joint. Apply embedment/base resin layer by terminating Sika Reemat at edges of crack or joint overlapping Sika Flexitape Heavy a minimum of 2 inch on both sides.

Joints greater than 1 inch- Treat as expansion joint. Consult Sika for recommendations.

Metal seams and plywood/coverboard joints - Apply 40-45 mil resin layer embedded with 3 or 6 inch Sika Flexitape Heavy centered over seam. Apply embedment resin layer per below.

Transitions between dissimilar materials- Apply 40-45 mil resin layer embedded with Sika Flexitape Heavy centered over edge. Apply embedment resin layer per below.

Membrane

Embedment/Base Resin Layer with Sika Reemat Reinforcement
Mixing not required. Apply either Sikalastic 601 BC or Sikalastic 621 TC at the coverage rate in the RoofPro System Guide with a 1/2 inch nap phenolic resin core roller. Material can also be squeegee or spray applied, in which case it should be backrolled prior to embedding Sika Reemat. Place Sika Reemat in wet base resin layer overlapping seams a minimum of 2 inches (place frayed edge over cut edge of roll) and apply wet roller to topside to saturate completely. After approximately 5 minutes the binder will begin to dissolve allowing the fiber strands to conform to irregular surfaces. Do not over work once the fibers have conformed to the substrate. Allow to cure 12 hours at 70 degrees F and 50 % RH or until tack free before top resin layer. Keep clean and dry and apply top resin layer within 7 days. If window is exceeded clean with non-sudsing detergent and clean water rinse, and allow to dry prior to application of Sika Reactivation Primer.

Top Resin Layer with Sika Reemat Reinforcement
Mixing not required. Apply Sikalastic 621 TC at the coverage rate in the RoofPro Systems Guide with a 1/2 inch nap phenolic resin core roller. Material can also be squeegee or spray applied, in which case it should also be backrolled. In the case of RoofPro 25 allow the first top resin layer to cure 12 hours at 70 degrees F and 50% RH or until tack free before applying second top resin layer. On top of the complete RoofPro system additional resin layers may be applied with aggregate for slip resistance - consult Sika for recommendations. Keep clean and dry and apply additional resin layers within 7 days. If window is exceeded clean with non-sudsing detergent and clean water rinse, and allow to dry prior to application of Sika Reactivation Primer.

Sikalastic RoofPro System Guide					
	RoofPro Metal	**RoofPro 10**	**RoofPro 15**	**RoofPro 20**	**RoofPro 25**
Substrates	Qualifying Metals	Concrete or cementitious, metals, wood, single-ply or bituminous, spray foam, stone or tile			
Primer	Required - see Substrate Priming Guide				
Detailing	Sika Flexitape Heavy centered over seams, transitions and properly treated cracks and joints				
Reinforcement	Local with Sika Flexitape	Sika Reemat Standard	Sika Reemat Premium embedded in base over entire surface		
601 BC (US)*		35 mils wet - 45 sf/gal.	45 mils wet - 35 sf/gal.		
621 TC (US)	20 mils wet - 80 sf/gal.	30 mils wet - 53 sf/gal.	30 mils wet - 53 sf/gal.	45 mils wet - 35 sf/gal.	45 mils wet - 35 sf/gal.
621 TC (US)	20 mils wet - 80 sf/gal.			30 mils wet - 53 sf/gal.	30 mils wet - 53 sf/gal.
621 TC (US)					30 mils wet - 53 sf/gal.
Total Film Thickness	32 mils dry	52 mils dry	59 mils dry	61 mils dry	84 mils dry
** May be substituted with Sikalastic 621 TC (US)*					

Wet on Wet Application with Sika Fleece Reinforcement
Mixing not required. To primed substrate apply two-thirds of the Sikalastic 621 TC specified in the RoofPro System Guide with a 1/2 inch nap phenolic resin core roller. Immediately place specified Sika Fleece into wet resin overlapping seams a minimum of 3" along the edge and 6" end-to-end. Apply wet roller to topside with light pressure to saturate fleece from bottom and ensure air pockets are completely removed. Immediately apply all of remaining one-third of Sikalastic 621 TC resin specified in the RoofPro System Guide to ensure even and complete fleece saturation from topside and uniform texture.

Sikalastic RoofPro System Guide with Sika Fleece			
	RoofPro 15	RoofPro 20	RoofPro 25
Substrates	Concrete or cementitious, metals, wood, single-ply or bituminous, spray foam, stone or tile		
Primer	Required - see Substrate Priming Guide		
Detailing	Sika Flexitape Heavy centered over seams, transitions and properly treated cracks and joints		
Reinforcement	Sika Fleece 120 (US)	Sika Fleece 140 (US)	Sika Fleece 170 (US)
621 TC (US)	70 mils wet - 23 sf/gal.	80 mils wet - 20 sf/gal.	100 mils wet - 16 sf/gal.
Total film Thickness	57 mils dry	65 mils dry	81 mils dry

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Aggregated or Flake Surfacing

Supplemental aggregate and flake surfacing is required for all applications that will experience direct foot traffic such as balconies, terraces, walkways, and plazas, and is recommended for areas that experience maintenance foot traffic. Supplemental aggregate surfacing is applied in a supplemental resin layer after the Sikalastic membrane has been installed and is not applied into the roofing/waterproofing membrane itself.

Seed and Back Roll Option

The Seed and Backroll option is primarily intended for use for maintenance traffic-type applications where enhanced slip resistance is required.

Apply Sikalastic 621 resin at 15 mils wet film thickness to the 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 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 621 resin at 15 mils wet film thickness to the 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 coat of Sikalastic resin.

Decorative Quartz and Decorative Flake Options

The Decorative Quartz and Decorative Flake options are intended for use for applications where enhanced slip resistance, physical protection of the roofing membrane, and a decorative element is required.

Apply Sikalastic 621 resin at 15 mils wet film thickness to the installed, cured membrane system. While the supplemental resin application is still wet broadcast to rejection (full broadcast, beach) with colored quartz aggregate or synthetic flakes. Remove excess aggregate/flakes after cure. Seal with a coat of Sikalastic 748 PA at 15 mils wet film thickness.

Decorative flakes can also be seeded at less than full broadcast quantities. Remove excess aggregate/flakes after cure. Seal with a coat of Sikalastic 748 PA at 15 mils wet film thickness.

Aggregate Selection

Use clean, rounded or semi-angular, oven dried quartz sand with a minimum hardness of 6.5 per the Moh's scale. It should be supplied in pre-packaged bags and free of metallic or other impurities. The following size gradations are recommended:

- 16-30 or 20-40 mesh for pedestrian traffic systems
- Sika DecoQuartz Blends or equivalent for Decorative Quartz systems

Flake Selection

Use virgin vinyl flakes, supplied in pre-packaged bags and free from impurities. The following is recommended:

- Sika DecoFlake Blends or equivalent for Decorative Flake systems

Tooling & Finishing

See Above

Removal

Remove liquid resin immediately with dry cloth. Once cured, resin can only be removed by mechanical means.

Over Painting

See Above

Limitations

- To avoid dew point conditions during application, relative humidity must be no more than 95% and substrate temperature must be at least 5°F (3°C) above measured dew point temperatures.
- Minimum ambient and substrate temperature during application and curing of material is 36°F (2°C); maximum is 95°F (35°C). Surface temperatures must be no higher than 140°F (60°C). Frequent monitoring of ambient and substrate temperature should always be done when applying polyurethane resins. Note that low temperatures and low humidity will slow down the cure, and high temperatures and high humidity will accelerate it.
- Do not apply on substrates with moisture content greater than 4% by weight, measured by Tramex Concrete Moisture Encounter meter.
- Minimum age of concrete must be 28 days depending on curing and drying conditions.
- Do not thin with solvents.
- Do not store materials outdoors exposed to sunlight and moisture for prolonged periods.
- 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 621 TC White (RAL 9016).

- Do not use for indoor applications.
- 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.
- Not recommended for direct exposure to heavy or frequent foot traffic without a supplemental aggregated or flake surfacing application.
- Do not apply cementitious products, such as tile mortar directly onto Sikalastic 601 BC (US) or 621 TC (US). See Sikalastic 624 WP (US) Product Data Sheet.
- Any repairs required to achieve a level surface 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 compatibility and adhesion testing and subsequent approval by Technical Services 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 covered with Sikalastic RoofPro membrane systems.
- 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 RoofPro systems without additional deck evaluation and subsequent approval by Technical Services.
- Do not subject to continuous immersion.
- Not recommended for use over ceramic tile.

Visit our website at usa.sika.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
Fax: 201-933-6225

Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537