

Sikaflex®-500 Series

SILANE TERMINATED POLYMER (STP) TECHNOLOGY FOR INDUSTRIAL EQUIPMENT

BUILDING TRUST

PERFORMANCE, VERSATILITY, SUSTAINABILITY, EASE OF USE

WHENEVER AN ELASTIC BONDING OR SEALING IS NEEDED, Sika offers a wide range of solutions suitable for the whole assembly process whilst satisfying the most demanding market requirements. Bonded joints have to meet severe specifications and demonstrate performance in shear, peel and fatigue, achieving reliable and long-term results. Sikaflex® Silane Terminated Polymer (STP) sealants and adhesives are based on a patented technology developed by Sika. Here, raw materials, processes and products have been carefully selected to advance the working properties and capabilities of the end product. Thanks to this technology, versatile product performances and curing systems are feasible to offer best suited solutions to meet customer requirements. Sika has also ensured that this technology and product range complies or even surpasses the most severe and demanding Environment, Health and Safety requirements. The combination of this attributes and the adhesion friendly behavior makes it a very user friendly and reliable solution.

PERFORMANCE
- Robust and secure adhesion with minimal substrate preparation
- Ageing and weathering resistant for long lasting interior and exterior joints
- Highly durable and mold resistant solutions

VERSATILITY
- Wide range of mechanical performance from sealing to high strength assembly applications
- Different curing systems available; one-component, accelerated one-component and two-component
- Diverse products in the range with additional specific features

SUSTAINABILITY
- Meets or even surpasses highest EHS standards
- Free of isocyanate, solvent, silicones and PVC; even products without phthalate and tin available
- Non-hazardous, low emission and odor, less need for chemical agents

EASE OF USE
- Primerless adhesion to most substrates commonly used in industry
- Outstanding application properties like short cut-off string and smooth tooling
- Easy, fast and clean application thanks to one-component systems

SUSTAINABILITY AND EHS PERFORMANCE

The Sikaflex® Silane Terminated Polymer Technology is highly sustainable as it combines proven durability and performance together with meeting the most severe EHS standards. Also thanks to its high adhesion performance, the requirement for pretreatment products are vastly reduced which further improves the environmental impact of the whole system.

The whole technology is non-hazardous, free of isocyanate, solvents and PVC and shows lowest emissions. The sustainability logo marks the best-in-class EHS products, and even exceed the most severe EHS standards to set a new benchmark, as they are also phthalate and tin free. It clearly follows the Sika way of "More Value / Less Impact" and makes it an ideal solution where low emission and EHS friendlier technologies are demanded.



CORE INDUSTRIAL EQUIPMENT PRODUCT RANGE

SIKA OFFERS A DIVERSE RANGE OF PRODUCTS AND SYSTEMS WITHIN THE STP TECHNOLOGY PORTFOLIO. Here only the core Industrial Equipment product range is outlined but more products for specific or specialized applications are available as well. Below the most relevant features and facts about the core product range can be found. For more detailed information please consult the latest Product Data Sheets or contact your local Sika representative.

KEY FEATURES OVERVIEW

	SEALANT	ADHESIVE SEALANT	ASSEMBLY ADHESIVE
ADVANCED PERFORMANCES AND FEATURES	Sikaflex®-515 Fast skinning multipurpose sealant ■ Excellent workability ■ Broad adhesion range	Sikaflex®-521 UV Multipurpose adhesive sealant ■ Broad adhesion range ■ Good weathering resistance ■ Can be sanded	Sikaflex®-552 AT Proven assembly adhesive ■ Capable of withstanding high dynamic stresses ■ High elasticity ■ Broad adhesion range ■ Excellent workability
		Sikaflex®-522 High weathering, ageing and mold resistance NEW ■ High color stability under UV ■ Broad adhesion range ■ Suitable for ventilation and incidental food contact ■ Meets highest EHS standards and EC1PLUS classification	Sikaflex®-554 Assembly adhesive with acceleration option NEW ■ Very good weathering and ageing resistance ■ ISEGA certified for foodstuff area usage ■ PowerCure® option available ■ Surpasses highest EHS standards)
			Sikaflex®-545 High initial grab assembly adhesive NEW ■ Instant part holding ■ Excellent workability ■ Broad adhesion range ■ Meets EC1 classification ■ Meets highest EHS standards
TWO-COMPONENT		Sikaflex®-950 Adhesive sealant for large surface bonding NEW ■ Excellent pumpability ■ Low assembly forces yet good non-sag properties ■ Broad adhesion range ■ Meets EC1PLUS classification ■ Meets highest EHS standards	Sikaflex®-953 L15 / L30 Fast curing assembly adhesive NEW ■ Broad adhesion range ■ Can be sanded ■ Good pumpability over long distances ■ Good gap filling capabilities ■ Two curing speeds available

CORE INDUSTRIAL EQUIPMENT PRODUCT RANGE

KEY TECHNICAL FACTS OVERVIEW

The Silane Terminated Polymer products serve as best solutions for very diverse applications due to the versatility of performance.
This page provides an overview about the key technical facts of the core Industrial Equipment product range.

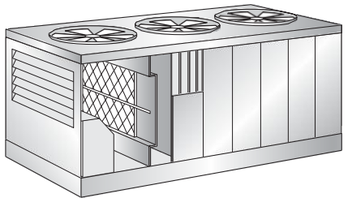
MECHANICAL FEATURES	Sikaflex®-515	Sikaflex®-521 UV	Sikaflex®-522	Sikaflex®-545	Sikaflex®-552 AT	Sikaflex®-554 *PowerCure	Sikaflex®-950	Sikaflex®-953 AF	Sikaflex®-953 L15/L30
Cure mechanism	1-component	1-component	1-component	1-component	1-component	1-component	2-component 1:1 mix ratio	2-component 10:1 mix ratio	2-component 10:1 mix ratio
Color	White, light grey, black	White, grey, black	White, light grey	White	White, black	White	Grey	White	White
Skin Time (1C products) Open Time (2C products) (min)	25	30	30	15	30	25	35	25	15 / 30
Non-sag properties	Fair	Good	Good	Excellent	Good	Good	Fair	Fair	Fair
Tear propagation resistance (MPa)	5	5.5	7.5	7	15	20	5.5	6	10
Tensile strength (MPa)	1.1	1.8	1.8	2.5	3	3.5	2.0	2.5	2.5
Elongation at break (%)	300	400	400	400	600	500	500	350	450
Shore A-hardness	25	40	40	45	50	55	35	40	50
Service temperature (°C) Short term	-50 to +90 120	-50 to +90 150	-50 to +90 150	-50 to +80	-40 to +90 160	-50 to +90	-50 to +80	-45 to +90 160	-45 to +90 160
APPLICATION FEATURES									
Sealing applications	●●	●●	●●	-	-	-	●●	-	-
Bonding applications	-	●	●	●●	●●	●●	●	●●	●●
Weathering resistance	●	●●	●●	●	●	●●	●	●●	●●
Mold and fungus resistance	-	-	●●	-	-	●	-	●●	-
Overpaintability	●	●	●	●	●	●	●	●	●
Fast fixation / handling	-	-	-	●●	-	●*	●	●●	●●
Large gap filling	-	-	-	-	-	●*	●●	●●	●●
ADHESION PERFORMANCE									
Metals and alloys	●●	●●	●●	●	●	●	●	●	●
Glass	●●	●●	●●	●●	●●	●●	●	●	●
Plastics and FRP	●●	●	●	●	●	●	●	●	●
Paints and coatings	●●	●●	●	●	●●	●	●	●	●

- Not suited
● Suited
●● Best suited

Please consult most current Sika Product Data Sheets or your local Sika contact prior to any use.
To achieve better adhesion with critical substrates or applications, please refer to the Pretreatment Chart for Silane Terminated Polymers.

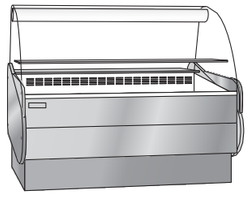
FIELDS OF APPLICATION

THANKS TO THEIR VERSATILE MECHANICAL AND APPLICATION PERFORMANCES, the Sikaflex® Silane Terminate Polymer (STP) adhesives and sealants are used for a wide variety of interior and exterior applications. Sika's broad product portfolio enables to have the right product for every application in typical markets like transportation, appliances, industrial equipment or building elements. Below you find an extract of potential applications and best suited products. For more detailed information please refer to the market and application related documentation.



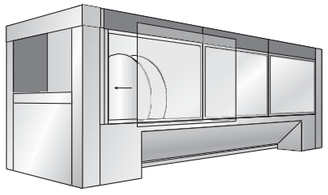
AIR CONDITIONING AND VENTILATION

Many elastic bonding and sealing joints for frame and body are required in this industry with respective qualification. For sealing applications Sikaflex®-522 and Sikaflex®-551 for bonding are well suited. For fast fixation the Sikaflex®-545 and for faster processing or larger joints Sikaflex®-953 or Sikaflex®-950 might be used.



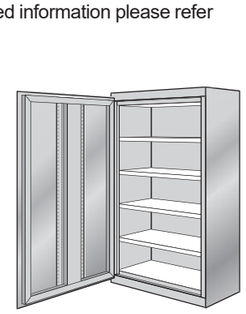
FOOD STORAGE AND COOLING

Elastic structural bonding and sealing of organic glass on metal frame can be achieved with Sikaflex®-552 AT. For mold resistant joints either Sikaflex®-551 or Sikaflex®-522 with indirect food contact approval are best suited.



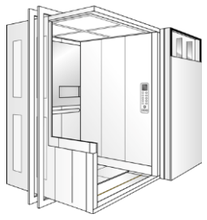
EQUIPMENT HOUSING

Constructions of equipment housings are diverse but most require elastic bonded and sealed joints. For sealing applications Sikaflex®-515 and Sikaflex®-552 AT for bonding are well suited. For fast fixation Sikaflex®-545 and for faster processing Sikaflex®-953 is be the best solution.



GENERAL METAL FABRICATION

Stiffener assembly to metal body or mirror bonding with proven Sikaflex®-552 AT or for fast handling with Sikaflex®-545. Sealing operations can be performed with Sikaflex®-515. The products show excellent adhesion on most metals and powder coats with minimal pretreatment.









INTERNAL





PACKAGING AND APPLICATION TOOLS

SIKA OFFERS SEALING AND BONDING SYSTEMS IN DIFFERENT PACK SIZES DEPENDING ON PRODUCT AND APPLICATION REQUIREMENTS. Several types of packaging exist: cartridges, unipacks, pails or drums. The choice of the right dispensing equipment depends on the frequency, volume and the type of application. Manual are best suited for on-site and smaller applications. Pneumatic dispensers are particularly suitable to create precise and regular beads and when using higher viscosity adhesives. Furthermore in cases when sensitive operations need to be realized with a simple manual dispenser, especially if continuous and long joints must be formed. Pumping and dosing equipment serve best in higher volumes and output as well as automation is required. Sika's application experts and system engineers can provide support in selecting the suitable solution to meet the specific requirements.

TYPICAL PACK SIZES OF Sikaflex® SOLUTIONS



300 ml cartridge for 1-component products



400/600 ml unipacks for 1-component products



Dual- / side-by-side cartridge for 2-part products



195 liter drums and 23 liter pail



Manual dispenser for 300ml cartridges



Pneumatic dispenser for unipacks



Electronic dispenser for unipacks



Manual dispenser for unipacks



Pneumatic dispenser for dual-/ side-by-side cartridges
correct mixer must be used

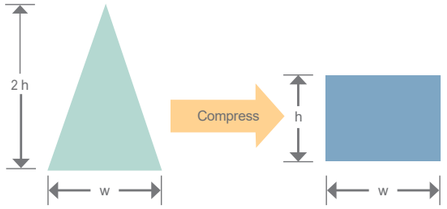
INTERNAL

APPLICATION TIPS

NOZZLE GEOMETRY

Leaks and stress in the components and other problems can be eliminated by proper preparation before bonding. Cutting the adhesive nozzle correctly reduces potential sources of errors. This allows the adhesive to be applied with the right dimensions and perform properly. For bonding applications the adhesive should preferably be applied to the joint in the form of a triangular bead. This ensures optimal wetting of the material by the adhesive. It also prevents gaps in the adhesive bead, insufficient compensation for the tolerances of the joined parts, and an excessively thin layer which could result in water entry. With plastics, an adhesive layer that is too thin can lead to stress cracks. With a flush bond on a flange, the height of the nozzle cut should correspond to the height of the flange. The surfaces of the joined parts are brought even by pressing (see sketches).
For single-component moisture curing adhesives, the bonded joint should be no wider than 20 mm due to the longer curing time.

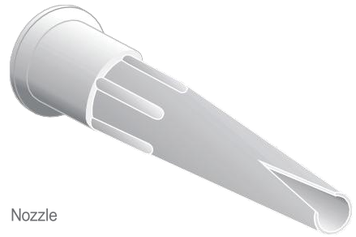
Adhesive application



Thickness = h
If necessary use spacer

Desired adhesive dimension

V-cut for application of a triangular adhesive bead
Diameter = bead width
V height = approximately twice the required adhesive layer thickness



Nozzle



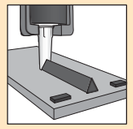
APPLICATION TIPS

PROCEDURE

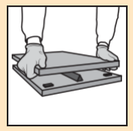


Bonding and sealing surfaces must be clean, dry and free of oil and grease. If necessary, sand bonding surfaces with a scouring pad and remove the dust. Remove heavy soiling with Sika® Remover-208 or Sika® Cleaner P. See the reatment Chart or Additional Product Information Sheet for more information.

BONDING

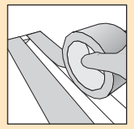


When using non-sag products, apply the adhesive as a triangular bead. Cut the nozzle according to the printed scale and hold the gun perpendicular while applying. With two-component products, use the recommended static mixer and apply the adhesive in dots or as a bead. Observe the minimum layer thickness and use spacers as needed.

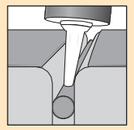


Position and press both plates so that they adhere to one another. If necessary, fix the component and leave it to polymerize. Respect skin and open time on assembly, and handling time for further processing.

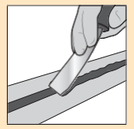
SEALING



Tape the joint with masking tape even to the surface. If required, limit the joint space with a PE-foam using a wooden rounded spatula.



Fill up the space with Sikaflex®. Apply it from the bottom. Avoid air entrapment.



Remove excess Sikaflex® with a flexible spatula.



Remove masking tape immediately after this operation.



Tool surface with Sika® Tooling Agent N. All tooling and finishing must be carried out within the skin time of the sealant.



Use a scraper and Sika® Remover-208 to remove any excess uncured adhesive.
Other cleaners may interfere with the curing process.

GLOBAL BUT LOCAL PARTNERSHIP



FOR MORE INFORMATION:

sika.com/appliances

WHO WE ARE

Sika is a specialty chemicals company with a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing and protecting in the building sector and the motor vehicle industry. Sika's product lines feature concrete admixtures, mortars, sealants and adhesives, structural strengthening systems, flooring as well as roofing and waterproofing systems.

Our most current General Sales Conditions shall apply.
Please consult the Data Sheet prior to any use and processing.

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SIKA SERVICES AG
Tueffenwies 16
CH-8048 Zurich
Switzerland

CONTACT
Phone: +41 58 436 40 40
Fax: +41 58 436 55 30
www.sika.com/industry

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