

Sikaflex[®] 220+

Technical Product Data (typical values) *Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

Chemical base		1-C polyurethane
Color		Black
Cure mechanism		Moisture-curing
Density (uncured)		10.0lbs/gal
Non-sag properties		Excellent
Application temperature	product	40°F - 110°F
Tack free time ¹		30 minutes
Open time ¹		15 minutes
Shore A-hardness		50-55
Tensile strength		1000-1200 psi
Elongation at break		500-600%
Safe Drive-Away Time ¹ (cars)	according to FMVSS 212 / 208	see chart 1
Service temperature range		-40°F - 200°F
Shelf life (storage below 75°F (25°C))	cartridge	9 months

¹⁾ 73°F (23°C) / 50% r.h.

Description

Sikaflex[®] 220+ is a one component cold-applied, fast-curing, high-viscosity polyurethane adhesive designed for use in replacing direct glazed automotive glass parts. Engineered to perform to the strength of OEM requirements, Sikaflex[®] 220+ exceeds all federal requirements even in the most severe interpretations for FMVSS 212 / 208. Store cartridge below 75°F. Avoid contact with alcohol, and alcohol-containing solvents during cure. Sikaflex[®] 220+ is manufactured in accordance with ISO 9001 / 14001 quality assurance system and the responsible care program. Additional information can be obtained at www.sikausa.com or by contacting Technical Service Department of Sika Industry at (tsmh@sika-corp.com).

Product Benefits

- Cost effective
- One-component formulation
- Fast curing speed
- High mechanical performance
- Black primerless to glass
- Short cut-off string
- Safe Drive Away Time in as little as two hours when used on vehicles without a passenger side airbag, eight hours with passenger airbag
- Exceeds FMVSS 212/208 in its most severe interpretation with dual airbags and unrestrained dummies

Areas of Application

Sikaflex[®] 220+ is designed for use in replacing polyurethane direct-glazed automotive glass parts.

This product is suitable for experienced professional users only. Tests with actual substrates and conditions have to be performed to ensure adhesion and material compatibility.

Industry



Cure Mechanism

Sikaflex[®] 220+ cures by reaction with atmospheric moisture. At low temperatures the water content of the air is generally lower and the reaction proceeds more slowly extending Safe Drive Away Time.

Safe Drive Away Time

Rel. Hum.	Temperature (°F)					
	>15	>25	>40	>50	>72	>95- <110
Without Airbags (hours)						
>90%	24	24	4	3	2	2
>70%	24	24	4	3	2	2
>40%	NR	24	12	4	2	2
>10%	NR	NR	24	24	4	2
>0%	NR	NR	NR	NR	4	4
With Passenger Airbags (hours)						
>90%	NR	NR	16	12	8	8
>70%	NR	NR	16	12	8	8
>40%	NR	NR	NR	16	8	8
>10%	NR	NR	NR	NR	16	8
>0%	NR	NR	NR	NR	NR	NR

Chart 1: SDAT for Sikaflex[®] 220+

Method of Application

Surface preparation

Surfaces must be clean, sound, dry and free from all traces of dust and grease. All corrosion must be removed and all bare metal scrapes and scratches must be prepared in accordance with Sika's Corrosion Treatment recommendations. Prepare bond area of glass with Sika[®] Aktivator PRO. **THIS PRODUCT IS TO BE USED BY TRAINED INSTALLERS ONLY. DO NOT USE WITHOUT THOROUGH REVIEW OF THE SIKA AGR TECHNICIAN TRAINING MANUAL, PRODUCT DATA SHEETS AND MATERIAL SAFETY DATA SHEETS. ALL DOCUMENTS ARE AVAILABLE AT WWW.SIKAUSA.COM. PRIOR TO APPLICATION OF THIS PRODUCT, SIKA[®] AKTIVATOR PRO MUST BE USED TO PREPARE THE BOND AREA OF THE GLASS IN ORDER TO LIMIT DISPLACEMENT OF GLASS IN THE EVENT OF A CRASH. IF NOT USED AS DIRECTED, PRODUCT MAY NOT PERFORM AS INTENDED AND PERSONAL INJURY OR DAMAGE MAY RESULT FROM FAILURE OF PRODUCT TO PROPERLY ADHERE TO GLASS.** For preparation of all bonding surfaces it is required to read and understand the instructions given in the Sika AGR Technician Training Manual. The AGR Technician Training Manual as well as Additional information can be obtained at www.sikausa.com or by contacting

Technical Service Department of Sika Industry at (tsmh@sika-corp.com).

Application

Puncture seal, attach appropriately cut nozzle (e.g. "V" notch) and apply adhesive. For complete instructions, refer to the Sika AGR Technician Training Manual. **THIS PRODUCT IS TO BE USED BY TRAINED INSTALLERS ONLY. DO NOT USE WITHOUT REVIEW OF ALL SIKA INSTALLATION GUIDELINES AND MSDS.**

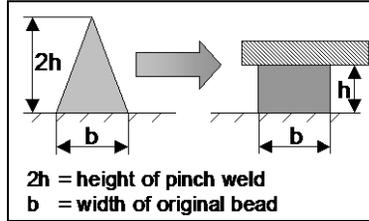


Figure 1: Recommended Bead Configuration

Tooling & Finishing

Tooling and finishing must be carried out within the tack free time of the adhesive. We recommend the use of Sika[®]-Slick. Other finishing agents or lubricants must be tested for suitability/compatibility.

Removal

Uncured Sikaflex[®] 220+ can be removed from tools and equipment with mineral spirits or another suitable solvent. Once cured, the material can only be removed mechanically. Hands and exposed skin should be washed immediately using a suitable industrial hand cleaner and water. Strictly follow solvent manufacturer's instructions for use and warnings. Do not use solvents on skin!

Limitations

- **THIS PRODUCT IS FOR USE ONLY BY TRAINED APPLICATORS.**
- Not to be used on vehicles that require high modulus and/or non-conductive adhesives.
- Product performs best when stored between 50 - 75°F.
- Wind chill does not affect product properties.
- Never apply over clear coat paint.
- Always use in conjunction with Sika[®] Aktivator PRO.
- Do not apply to rusty surfaces.
- If stored above 75°F, the shelf life could be reduced.

- Contact of uncured adhesive with alcohol containing substances will prevent proper cure.
- Once opened, contents of cartridges should be used up the same day or protected for later use, otherwise the contents will harden and be rendered useless.

WARNING: IRRITANT, SENSITIZER.

Contains Polyisocyanate Prepolymer (Mixture) and Petroleum Naphtha (CAS 64742-82-1). Causes eye / skin / respiratory irritation. May cause sensitization by inhalation. Harmful if swallowed.

Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain, liver, kidney and nervous system damage. **Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.**

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

HMIS

Health	*2
Flammability	1
Reactivity	0
Personal Protection	C

First Aid Measures

Eyes – Hold eyelids apart and flush thoroughly with water for 15 minutes. **Skin** – Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water. **Inhalation** – Remove to fresh air. **Ingestion** – Do not induce vomiting. Dilute with water. Contact physician. **In all cases contact a physician immediately if symptoms persist.**

Further Information

In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887. For more information, consult Material Safety Data Sheet and Product Data Sheet, contact Sika at 1-800-933-SIKA or visit www.sikausa.com.

Further information available at:
www.sikausa.com

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Sika[®]



Copies of the following publications are available on our website www.sikausa.com or by contacting Technical Service Department of Sika Industry at (tsmh@sika-corp.com):

- Material Safety Data Sheets
- Product Data Sheet

In case of emergency call:
CHEMTREC: 800-424-9300
International: 703-527-3887

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Material Safety Data Sheets containing physical, ecological, toxicological and other safety related data. It is highly recommended to read the actual Material Safety Data Sheet before using the product.

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

Packaging Information

Cartridge	300 ml
Unipac	600 ml

Value Basis

All technical data stated in this Product Data Sheet are based on laboratory tests only. Actual measured data in the field may vary due to site specific conditions which are not known to Sika and beyond our control.

Handling and Storage

Avoid direct contact. Wear personal protective equipment (chemical resistant goggles/gloves/clothing) to prevent direct contact with skin and eyes. Use only in well ventilated areas. Open doors and windows during use. Use a properly fitted NIOSH respirator if ventilation is poor. Wash thoroughly with soap and water after use. Remove contaminated clothing and launder before reuse.

Clean Up

Use personal protective equipment (chemical resistant gloves / goggles / clothing). Without direct contact, sweep up spilled or excess product and place in suitable sealed container. Dispose of excess product and container in accordance with applicable local, state, and federal regulations.

Limited Material Warranty

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 shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. **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.**

Legal Notes/Disclaimer

All information provided by Sika Corporation ("Sika") concerning Sika products, including but not limited to, any recommendations and advice relating to the application and use of Sika products, is given in good faith based on Sika's current experience and knowledge of its products when properly stored, handled and applied under normal conditions in accordance with Sika's instructions. In practice, the differences in materials, substrates, storage and handling conditions, actual site conditions and other factors outside of Sika's control are such that Sika assumes no liability for the provision of such information, advice, recommendations or instructions related to its products, nor shall any legal relationship be created by or arise from the provision of such information, advice, recommendations or instructions related to its products. The user of the Sika product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with the full application of the product(s).

Sika reserves the right to change the properties of its products without notice. All sales of Sika product(s) are subject to its current terms and conditions of sale which are available at www.sikausa.com or by calling 201-933-8800.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Material Safety Data Sheet which are available at www.sikausa.com. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Material Safety Data Sheet prior to product use.

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