

# Sikaflex®-296

## Marine Window Adhesive

### Technical Product Data (typical values)

Chemical base	1-C polyurethane
Color	Black
Cure mechanism	Moisture Cure
Density (uncured)	10.1 lb/gal
VOC (EPA method 24)	0.53 lb/gal (64.1 g/l)
Non-sag properties	Very Good
Application temperature	product 50°F to 95°F (10-35°C)
Tack free time <sup>1</sup>	45 min
Open time <sup>1</sup>	30 min
Curing speed	(see diagram 1)
Shrinkage	<1%
Shore A-hardness (ASTM D 2240)	45
Tensile strength (ASTM D 412)	870 psi
Elongation at break (ASTM D 412)	450%
Tear propagation resistance (ASTM D 624)	57 pli
Tensile lap-shear strength (ASTM D 1002)	650 psi
Volume resistivity (ASTM D 257-99)	10 <sup>6</sup> Wcm appx.
Service range	-40°F to 194°F (-40-90°C)

<sup>1)</sup> 73°F (23°C) / 50% r.h.

#### Description

Sikaflex®-296 is an elastic one-part polyurethane adhesive that exhibits high strength and outstanding working characteristics. Sikaflex®-296 has been specifically designed for bonding windows to marine vessel body shells (direct glazing). Sikaflex®-296 is manufactured in accordance with ISO 9001 / 14001 quality assurance system and the responsible care program.

#### Product Benefits

- One-part formulation
- Low odor
- High initial strength
- Excellent working characteristics
- Resistant to aging, weathering and sunlight
- Solvent and PVC free
- Adheres well to a wide range of substrates (refer to Sika Primer Chart)
- Can be painted over
- Thermally and electrically non-conductive

#### Areas of Application

Marine direct glazing applications, suitable for use with all types of glass-based windows. Always refer to the Sika Window Bonding Guide for complete instructions and guidelines.

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®-296 cures by atmospheric moisture. At low temperatures the water content of the air is generally lower and the curing reaction proceeds somewhat slower (See Diagram 1).

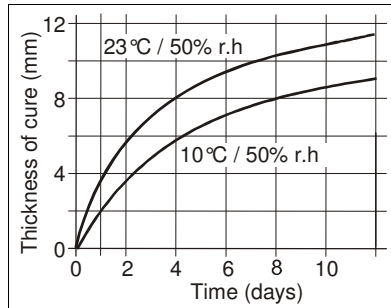


Diagram 1: Curing speed Sikaflex®-296

## Chemical Resistance

Sikaflex®-296 has very good, long term resistance to sea water, aqueous detergents, weak acids and weak bases. Sikaflex®-296 has temporary resistance to hydrocarbons such as gasoline, diesel fuels and mineral oils. Sikaflex®-296 has very reduced resistance to organic acids, strong acids, strong bases and aromatic aromas. The above information is offered for general guidance only. Advice on specific applications will be given on request.

## Method of Application

### Surface preparation

Surface preparation for glass and ceramic-coated glass:

- If the bonding surface is contaminated with oils or other organic substances, initial cleaning using solvents or high-pressure water cleaning with detergents is necessary.
- Soak a lint-free paper towel with Sika®-Aktivator. Wipe the glass and immediately wipe off to provide a very thin layer. Change and turn the towel often to avoid transferring dirt, oil, etc. from one area to another.
- Allow a 10 minute drying time. Install the window within 2 hours.

- Prepare the bonding surface that the glass is bonding to using the cleaner, primer and procedure recommended for that substrate. Advice on specific applications is available from the Technical Service Department of Sika Industry.

### Application

- Insert unipac into gun. Open unipac by cutting off clip as close to the bottom of clip as possible. Thread endcap onto gun barrel.
- Apply a triangular bead onto the glass. Install glass and align in correct position. Glass must be installed within 10 minutes of adhesive application.
- Use a plastic tool to remove excess adhesive. Clean up using mineral spirits, SCRUBS™-IN-A-BUCKET, acetone or MEK.
- Allow a 4 hour cure time before subjecting the unit to rigorous movement.

For advice on selecting and setting up a suitable pump system please contact the System Engineering Department of Sika Industry.

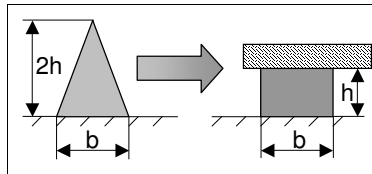


Figure 1: Recommended bead configuration

### Tooling and finishing

If necessary Sikaflex®-296 may be tooled using Sika®-Slick as a lubricant.

### Removal

Uncured Sikaflex®-296 may be removed from tools and equipment with mineral spirit 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 cleanser and water. Do not use solvents on hands!

### Overpainting

If overpainting is desired, the paint and paint process compatibility must be tested before use. Contact Sika Technical Services Department in all cases at 888-832-7452.

## Limitations

- Do not apply on frozen surfaces or through standing water or under water.
- Do not apply over silicones or in the presence of curing silicones.
- Alcohol inhibits the cure of Sikaflex® or any other polyurethane based material. Do not allow Sikaflex® to contact alcohol and alcohol-containing solvents during cure.
- Allow a minimum of 1 week full cure prior to total water immersion situations.
- Maximum chlorine exposure 2.5 ppm.
- Do not use as a deck seam sealant.
- Do not use to bond organic glass (i.e. polycarbonate and acrylic).

### Important Considerations:

- Always protect the bond-line from sunlight. The perimeter of the glass where bonded should have a ceramic coating or an exterior opaque trim. Refer to the Window Bonding Guide for further information.
- When applying sealant, avoid air entrapment.
- Protect from action of water during cure period.

## CAUTION: IRRITANT.

Irritant; Sensitizer: Contains polyisocyanate prepolymer. May cause skin/eye/respiratory irritation. May cause skin and/or respiratory sensitization after prolonged or repeated contact. Avoid contact. Use of safety goggles and chemical resistant gloves is recommended. In case of exceedance of PELs, use an appropriate, properly fitted NIOSH approved respirator. Remove contaminated clothing.

Further information available at:  
[www.sikaindustry.com](http://www.sikaindustry.com)

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## HMIS

Health	*2
Flammability	1
Reactivity	0
Personal Protection	C

## First Aid Measures

In case of skin contact, wash immediately and thoroughly with soap and water. If symptoms persist, consult physician. For eye contact, flush immediately with plenty of water for at least 15 minutes, contact a physician. For respiratory problems, remove person to fresh air; if symptoms persist, contact a physician. In case of ingestion, dilute with water and consult physician. Remove contaminated clothing.

## Further Information

Copies of the following publications are available on our website [www.sikaindustry.com](http://www.sikaindustry.com):

- Material Safety Data Sheets
- Product Data Sheet
- Sika Primer Chart
- General guidelines for bonding and sealing with Sika products

**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

Unipacs	600 ml
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## Value Basis

All technical data stated on this Product Data Sheet are based on the results of 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

Sikaflex®-296 should not be stored at temperatures in excess of 77°F. Properly stored in cool, dry conditions, the unopened unipacs have a shelf life of 9 months.

## Clean Up

Uncured sealant may be removed with solvent. Cured sealant is only removed mechanically. In case of spills or leaks, wear suitable protective equipment, remove physically and transfer to suitable container. Ventilate area. Avoid contact. Dispose of in accordance with current, 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 IMPLIED OR EXPRESS SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY**

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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.sikacorp.com](http://www.sikacorp.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

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Sheet which are available at [www.sikaindustry.com](http://www.sikaindustry.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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