

Sikaflex® 1a

One-Component, Polyurethane Sealant

Description	Sikaflex® 1a is a premium-grade, high performance, moisture-cured, one-component, polyurethane-based, non-sag elastomeric sealant.
Where to Use	<ul style="list-style-type: none"> ■ Designed for all types of joints with maximum depth of 13 mm (1/2 in) and a maximum expansion of 35%. ■ Excellent for small joints and fillets: windows, door frames, reglets, flashing, glazing, and many construction applications. ■ Suitable for vertical and horizontal joints; readily placeable at 4°C (39°F). ■ Many applications as an elastic adhesive between materials with dissimilar thermal coefficients of expansion. ■ Submerged conditions such as canal and reservoir joints.
Advantages	<ul style="list-style-type: none"> ■ Ideal for: Weatherproofing of joints between brickwork, blockwork, masonry, wood and concrete or metal frames; joints in walls, floors, balconies, around window or door frames: expansion joints; roofing. ■ Eliminates time, effort, and equipment for mixing, filling cartridges and cleaning of equipment. ■ High elasticity - Cures to a tough, durable, flexible consistency with exceptional cut and tear resistance. ■ Excellent adhesion - Bonds to most construction materials without primer in most cases. ■ Excellent resistance to aging, weathering. ■ Proven in tough climates around the world. ■ Resists fuel, mineral oils, and dilute minerals, plant and animal fats. ■ Odorless, non-staining, can be painted over with water, oil, and rubber-base paints. Since some paints dry slowly and the surface may remain slightly tacky, a preliminary test is essential. ■ Meets CAN/CGSB 19.13-M87, Classification MCG-2-25-B-N. ■ Meets Federal Specification TT-S-00230C, Type II, Class A. ■ Meets Federal Specification Spec TT-S-00227E ■ Meets ASTM C 920 Type S, Grade NS, Class 25. ■ Jet fuel resistant. ■ NSF approved for potable water contact. ■ Urethane based, suggested by EPA for radon reduction. ■ USDA approved. Chemically acceptable to the U. S. Department of Agriculture for use in meat and poultry processing areas under federal inspection. ■ Canadian Food Inspection Agency acceptance. ■ Ministère des Transports du Québec acceptance and Road Authority approved. ■ SWRI validated.

Technical Data			
Packaging	300 mL (10.1 fl. oz) cartridge, 24/case; 590 mL (20 fl. oz) sausage, 20/case; 17 L (4.5 US gal.) pail (special order only)		
Colour	Aluminum Grey, Anodized Grey, Architectural Bronze, Dark Bronze, Limestone, White, Colonial White, Capitol Tan, Black, Stone, Medium Bronze, Hartford Green, Redwood Tan.		
Shelf Life	Cartridge/sausage: 12 months; pail: 9 months - in original, unopened packaging. Store between 4° - 23°C (39° - 73°F). Condition product to 18° - 23°C (65° - 73°F) before using.		
Yield	Linear Meter of Sealant per Liter Linear Feet per Cartridge		
Width	Depth	Depth	
mm (in)	6 (¼)	13 (½)	6 (¼) 13 (½)
6 (¼)	24.8		24.4
13 (½)	12.4	6.2	12.2 6.1
19 (¾)	8.3	4.1	8.2 4.0
Application Temperature	4° - 38° C (39° - 100°F). Sealant should be installed when joint is at mid-range of its anticipated movement.		
Properties at 23°C (73°F) and 50% R.H.			
Service Range	-40° - 77° C (-40° to 170°F)		
Curing Rate	Tack-free time	4 hrs (TT-S-00230C)	
	Tack-free to touch	3 hrs	
	Final cure	4 to 7 days	
Tear Strength ASTM D 624	8.5 N/mm (50 lb/in)		
Shore A Hardness ASTM D 2240	21 days		
Tensile Properties ASTM D 412	21 days		
	Tensile stress	1.37 MPa (200 psi)	
	Elongation at break	500%	
	Modulus of elasticity	25%	0.24 MPa (35 psi)
		50%	0.41 MPa (60 psi)
		100%	0.59 MPa (85 psi)



Adhesion in Peel TT-S-00230C, ASTM C 794		
Substrate	Peel Strength	Adhesion Loss
Concrete	3.4 N/mm (20 lb/in)	0%
Aluminum	3.4 N/mm (20 lb/in)	0%
Glass	3.4 N/mm (20 lb/in)	0%
Weathering Resistance	Excellent	
Chemical Resistance	Good resistance to water, diluted acids, and diluted alkalines. Consult Technical Service for specific data.	
VOC (EPA Method 24)	40 g/L	

How to Use

Surface Preparation

All joint surfaces must be clean, sound, and frost-free. Joint walls must be free of oils, grease, curing compound residues, and any other foreign matter that might prevent adhesion. Ideally this should be accomplished by mechanical means. Bond breaker tape or backer rod must be used in bottom of joint to prevent bond.

Priming

Priming is not usually necessary. Most substrates only require priming if testing indicates a need or where sealant will be subjected to water immersion after cure. Consult Sikaflex® Primers Product Data Sheet for additional information

Application

Recommended application temperatures are between 4° - 38°C (39° - 100°F). For cold-weather application, store units at approximately 21°C (70°F) and remove just prior to using. Make sure joint is frost-free. Install with hand or power operated caulking gun. For best performance, Sikaflex® 1a should be gunned into joint when joint slot is at mid-point of its designed expansion and contraction. Cut plastic tip on cartridge to desired joint size. Puncture airtight seal at base of tip. Place nozzle of gun into bottom of joint and fill entire joint. Keeping the nozzle deep in the sealant, continue with a steady flow of sealant preceding nozzle to avoid air entrapment. Also, avoid overlapping of sealant since this also entraps air. Tool as required. Proper joint design for moving joints is 2:1 width to depth ratio, with a recommended 6 mm (1/4 in) minimum and 13 mm (1/2 in) maximum depth of sealant. For non-moving joints, the width to depth ratio can vary.

Clean Up

Uncured material can be removed with Sika® Equipment Cleaner/Epoxy Thinner or Sika® Hand Cleaner. Cured material can only be removed manually or mechanically.

Limitations

- Allow 1 week cure under standard conditions when using Sikaflex® 1a in total water immersion situations and prior to painting.
- When overcoating with water, oil and rubber based paints, compatibility and adhesion testing is essential.
- Avoid exposure to high levels of chlorine. (Maximum continuous level is 5 ppm of chlorine.)
- Maximum depth of sealant must not exceed 13 mm (1/2 in); minimum depth is 6 mm (1/4 in).
- Maximum expansion and contraction should not exceed 35% of average joint width.
- Do not apply or cure in the presence of curing silicone sealants.
- Avoid contact with alcohol and other solvent cleaners during cure.
- Do not apply when moisture vapour transmission condition exists from the substrate as this can cause bubbling within the sealant.
- Some minimal surface skinning of product may be present in bulk packaging (pails, drums) within its shelf life. Cut and discard cured material to expose the uncured product that still may be used.
- Use opened cartridges and uni-pac sausages the same day.
- When applying sealant, avoid air-entrapment.
- Since material is moisture-cured, permit sufficient exposure to air.
- White colour tends to yellow slightly when exposed to ultraviolet rays.
- Light colours can yellow slightly if exposed to direct gas fired heating elements prior to formation of initial skin.
- The ultimate performance of Sikaflex® 1a depends on good joint design and proper application with joint surfaces properly prepared.
- Certain substrates require the use of a primer. Please consult the Sikaflex® Primers Product Data Sheet or Sika's Technical Services.
- The depth of sealant in horizontal joints subject to traffic is 13 mm (1/2 in).
- Do not tool with detergent or soap solutions.

Caution

Avoid contact with skin. Wash hands thoroughly with warm water and soap. According to FHSLA Toxicity rating, Sikaflex® 1a is a skin irritant, an eye irritant, not toxic orally, not toxic by inhalation and not toxic dermally. Consult product label for additional information.

First Aid

In case of skin contact, wash with soap and water. For eye contact flush immediately with plenty of water for at least 15 min. Contact a physician. For respiratory problems, transport victim to fresh air. Remove contaminated clothing and wash before re-use.

For more information, consult Sika Material Safety Data Sheet.

KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY

The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelf life. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under www.sika.ca.

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