

Product Data Sheet

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Sikaflex® 1a

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One-Component, Medium Modulus and High Performance, Elastomeric Polyurethane Sealant

Description Sikaflex® 1a is a premium-grade, high performance, moisture-cured, one-component, polyurethane-based, non-sag elastomeric sealant.

- Where to Use**
- 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.
 - 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.

- Advantages**
- Capable of ± 35% joint movement.
 - 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.
 - 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 C920 Type S, Grade NS, Class 35. Use T, NT, O, M, G, I.
 - Jet fuel resistant.
 - ANSI/NSF Standard 61 approved for contact with potable water (Black, White, Colonial White, Aluminum Grey, Anodized Grey, Dark Bronze, Limestone, White, Colonial White, Capitol Tan, Black, Stone, Medium Bronze, Redwood Tan).
 - 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.
 - Product qualified by The Road Authority (TRA).
 - SWRI validated.

Technical Data				
Packaging				
300 mL (10.1 US fl. oz) cartridge, 24/case; 590 mL (20 US fl. oz) sausage, 20/case;				
Colour				
Aluminum Grey, Anodized Grey, Dark Bronze, Limestone, White, Colonial White, Capitol Tan, Black, Stone, Medium Bronze, Redwood Tan.				
Yield		Linear Meter of Sealant per Litre	Linear Feet of Sealant per Cartridge	
Width		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
Shelf Life				
Cartridge/sausage: 12 months; pail: 6 months - in original, unopened packaging. Store between 4 and 35°C (39 and 95°F). Condition product between 18 and 23°C (65 and 73°F) before using.				
Application Temperature				
4 to 38°C (39 to 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 to 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 D624				
8.5 N/mm (50 lb/in)		21 days		
Shore A Hardness ASTM D2240				
21 days		40 ± 5		
Tensile Properties ASTM D412				
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 C794

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.	

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

How to Use

Surface

Preparation

All joint surfaces must be clean, sound, dry and frost-free. Joint walls must be free of oils, tar, asphalt, bitumen, grease, paints, coatings, sealers, 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 to 38°C (39 to 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 from equipment and tools using Sika® Equipment Cleaner. Cured material can only be removed manually or mechanically. For removal of uncured material from hands and sensitive surfaces, use Sika® Hand Cleaner towels.

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.
- Avoid contact with materials or surfaces impregnated with, or containing, oil, asphalt, tar or bituminous substances.
- Do not apply or cure in the presence of uncured silicone sealants, alcohol and other solvent cleaners.
- 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 Canada's Technical Services.
- Although applying sealants over paints, sealers or coatings is not recommended within the industry, where it cannot be avoided, it is always necessary to test for adhesion. It should also be recognized that the existing paint, sealer or coating will dictate bond values and possibly the integrity of a subsequently applied sealant and thus the performance of the joint.
- The depth of sealant in horizontal joints subject to traffic is 13 mm (1/2 in).
- Do not tool with detergent or soap solutions.

Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the **most recent Material Safety Data Sheet** containing physical, ecological, toxicological and other safety-related data.

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 Product 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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