Product Data Sheet
Edition 02, 2015
Version no. 12.2014

Construction

Sikaflex®-1a

One-Part Polyurethane, elastomeric sealant/adhesive

Product Description	Sikaflex- 1a is a premium-grade, high-performance, moisture-cured, 1-component, polyurethane-based, non-sag elastomeric sealant. Meets Federal Specification TT-S00230C Type II Class A. Meets ASTM - C920 Type - S Grade N.S, Class 35 , use T, NT, O, M, G, I,. Canadian standard CAN/CGSB 19.13-M87
Uses	Sikaflex® -1a designed for all types of joints with excellent adhesion to many materials. It is used extensively in both civil engineering and building construction for sealing: ■ Excellent for small joints and fillets, around windows, door frames, reglets, flashing, common roofing detail applications, and many construction adhesive applications. ■ Suitable for vertical and horizontal joints, readily placeable 40º F. ■ Has many applications as an elastic adhesive between materials with dissimilar coefficients of expansion. ■ Submerged conditions, such as canal and drinking water reservoirs. ■ Sewage tanks and sewage treatment plants.
Advantages	■ Easy and economical in use with eliminate time, effort, and equipment for mixing, filling cartridges, pre-heating or thawing, and cleaning of equipment. ■ Fast tack-free and final cure times. ■ Excellent adhesion without primer on most materials. ■ Outstanding aging and weathering properties. ■ Non-sag in both vertical and overhead joints. ■ Good resistance to micro-organisms. ■ Resistant to jet fuel and salt water. ■ Paintable with water-, oil- and rubber-based paints. ■ Suitable for contact with drinking water, certified to the NSF/ANSI Standard 61. ■ Resistant to city sewage medium. ■ Capable of ±35% joint movement.
Certificate of Approval	■ The Egyptian National Organisation for Water and Sanitary Water. Sikaflex 1a has been tested as per US EPA Method 24. Result: VOC Content < 50 g/L

Product Data

Type	Polyurethane Elastomer
Colour	White, light grey, concrete grey, brown, black. Other colours are available on request.
Packaging	310 ml cartridges (12 per carton) 310 ml unipacs (12 per carton) 600 ml unipacs (20 per carton)
Storage	Store at temperatures between + 4°C and 35°C. Keep away from moisture and heat.
Shelf life	12 months from date of production if stored properly in original unopened packing.

Technical Data

Density	1.2 - 1.3 kg/l (depending on colour).
Movement Capacity	± 35% of the average joint width.
Shore A-Hardness	
DIN 53505	25 - 35 (after 28 days at 23°C / 50% r.h.)
ASTM-D-2240	40 ± 5 (at 21 days)
Curing Rate	Tack-free time 3 to 6 hours Tack-free to touch 3 hours Final cure 4 to 7 days
Tensile Properties	
Tensile Stress (DIN 52450)	50% elongation at 20°C = 0.15 - 0.18 N/mm^2 100% elongation at 20°C = 0.2 - 0.3 N/mm^2
Tensile Stress (ASTM -D, 412)	175 psi (1.21 MPa) at 21 days
Modulus of Elasticity (ASTM -D, 412)	25% 35 psi (0.24 MPa) 50% 60 psi (0.41 MPa) 100% 85 psi (0.59 MPa)
Elongation at Break	
(DIN 52455)	> 400%
ASTM-D, 412	550% at 21 days
Tear Stress (ASTM D-624)	55 lb./in. at 20°C = 0.1 N/mm

Adhesion in Peel (TT-S-00230C, ASTM C 794)

Substrate	Peel Strength	Adhesion Loss
Concrete	20 lb.	0%
Aluminum	20 lb	0%
Glass	20 lb	0%

Recovery	> 80%
Chemical Resistance	Good resistance to water, diluted acids, and diluted alkalines. Consult Technical service for specific data.

Application Data

Joint configuration Note

- Minimum joint depth for movement joints: 8 mm
- Maximum joint width : 40 mm
- Width / depth ratio for joints up to 10 mm wide 1 : 1
- Width / depth ratio for joints from 10 mm to 40 mm 2 : 1
- Joint widths + 30 to 40 mm to be Triangulated application

Consumption

A guide to Sikaflex® -1a quantities (for fillet work multiply metre run per cartridge or “sausage” by two)

Joint size in mm	Liter Sikaflex® -1A per meter run	Meter run per Cartridge	Meter run per Sausage	Joint size in mm	Liter Sikaflex® -1A per meter run	Meter run per Cartridge	Meter run per unipak
5 x 5	0.025	12.4	24	20 x 10	0.200	1.55	3
5 x 10	0.050	6.2	12	20 x 15	0.300	1.04	2
5 x 15	0.075	4.2	8	20 x 20	0.400	0.78	1.5
10 x 10	0.100	3.1	6	25 x 12.5	0.310	1.00	1.94
10 x 15	0.150	2.0	4	25 x 15	0.380	0.81	1.58
10 x 20	0.200	1.55	3	25 x 20	0.500	0.62	1.20
10 x 25	0.250	1.24	2.40	25 x 25	0.630	0.50	0.95
15 x 10	0.150	2.06	4	30 x 15	0.450	0.69	1.33
15 x 15	0.225	1.35	2.70	30 x 20	0.600	0.51	1.00
15 x 20	0.300	1.04	2	30 x 25	0.750	0.42	0.80
15 x 25	0.375	0.82	1.60	40 x 20	0.800	0.39	0.75
15 x 30	0.450	0.69	1.33	40 x 25	1.000	0.31	0.60
15 x 40	0.600	0.51	1.00	40 x 30	1.200	0.26	0.50

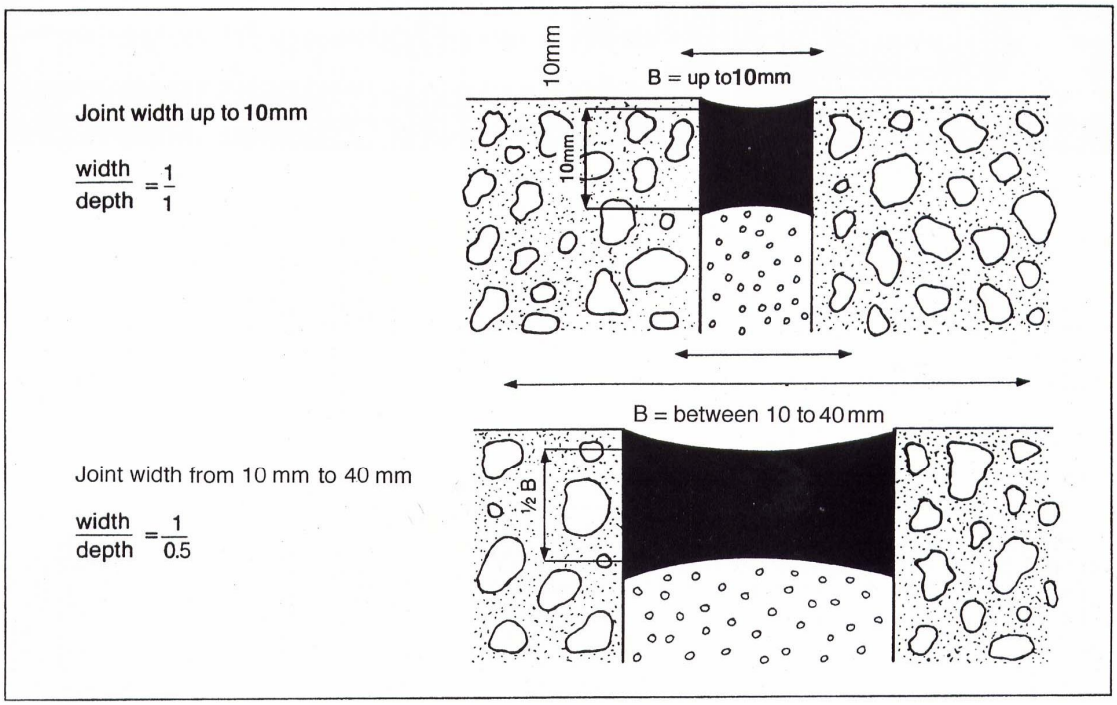
(Refer to joint design guide)

Surface Preparation	All surfaces must be clean, dry and free from oil, grease and all loosely adhering particles. Curing compound residues and any other foreign matter must be thoroughly removed. A roughened surface will also enhance bond. Install bond breaker tape or baker rod to prevent bond at base of joint.

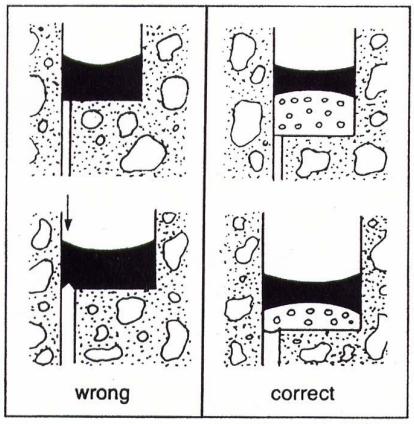
Application

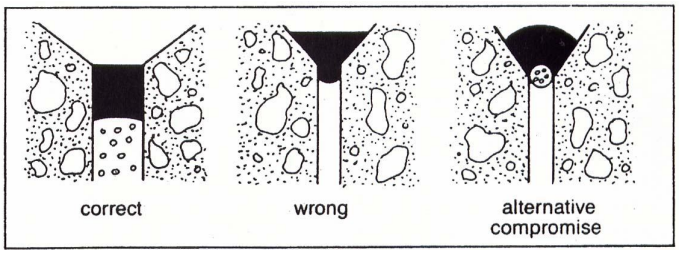
Service Temperature	-30°C to +80°C
Application Temperature	+5°C to 35°C
Priming	Priming is not usually necessary. Most substrates only require priming if testing indicates a need or where sealant will be subjected to water immersion after cure On porous surfaces such as concrete, render, brickwork and timber, use Sika Primer® -3. For other substrates consult Sika Primer Chart.
Application	Sikaflex® -1a is applied direct from the cartridge or the unipac with a suitable sealant gun. Place nozzle of gun into bottom of the joint and fill entire joint Keep the nozzle in the sealant, continue on with a steady flow of sealant preceding the nozzle to avoidair entrapment. Avoid overlapping of sealant to eliminate entrapment of air. Tool sealant to ensure full contact with joint walls and remove air entrapment. For use in horizontal joints in traffic areas, Proper design is 2:1 width to depth ratio. The absolute minimum depth of the sealant is 1/2 in. and closed cell backer rod is recommended.
Back -up	Use closed cell polyethylene profiles.
Cleaning	Clean all tools and equipment immediately ager use with Sika Colma Cleaner.
Important Notes	■ Do not use Sikaflex® -1a for expansion joints in weak building materials such as cement mortar, aerated concrete or rigid foam. ■ Avoid exposure to high levels of chlorine. (Maximum continuous level is 5 ppm of chlorine.) ■ Ensure that all traces of release agents, curing compounds and silicone treatments are removed or test for adequate adhesion first. ■ Although still good functionally, white Sikaflex® -1a may discolour slightly with age (external application). ■ For best results in tooling the sealant, use a spatula and liquid detergent diluted 1 : 10 with water (for smoothing). ■ If the sealant is to be used for other applications, consult our technical service. ■ Not to be used for glazing. ■ Avoid contact with alcohol and other solvent cleaners during cure. ■ When Sikaflex® -1a be over-coating with water, oil and rubber based paints, adhesion / compatibility testing is necessary. ■ Do not apply to concrete treated with “glazing” coating. ■ Allow 1-week cure at standard conditions when using Sikaflex® -1a in total water immersion situations and prior to painting.

Joint design for elastic sealants
When constructing a joint the following measurements have to be observed. Normally the joint structure has to have the following values.

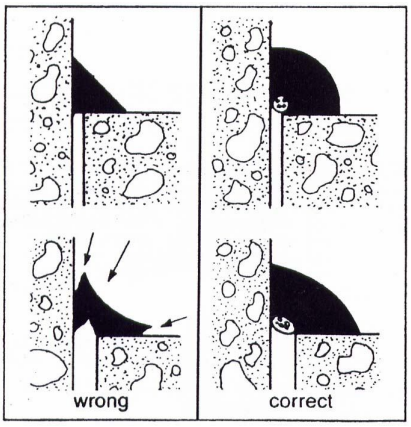


For concrete and masonry joints subject to movement the depth of the joint has to be at least 8 mm





The "floor" of the joint must not restrict the deformation of the sealant since could result in failure during joint opening. The depth of the joint should be adjusted by inserting Sika Backing



In corner joints the insertion of a strip of Sika Backing Rod is required. Otherwise the sealant will fail during expansion of the joint.

Note: Joints wider than 35 mm should normally be triangulated in accordance with standard practice.

Construction

Safety Instructions

Ecology	Do not dispose of into water or soil but according to local regulations.
Transport	Non-hazardous
Safety Precautions	Wear rubber gloves during application, change soiled clothes after work and wash hands with warm water and soap.
Toxicity	Non-toxic under relevant health and safety codes.

Legal notes

Sika Egypt for Construction Chemicals
El Abour City
1st industrial zone (A)
Section # 10 Block 13035,
Egypt

Tel :+202- 4481 0580 / 90
Fax :+202- 4481 0459
Mob :+2012- 2390 8822/55
www.sika.com.eg