

## PRODUCT DATA SHEET

## Sikaflex®-1a

Elastomeric joint sealant / adhesive

## DESCRIPTION

Sikaflex®-1A is a 1-part, polyurethane, coloured, moisture curing non-sag elastomeric sealant. Movement capability  $\pm 35\%$ . Internal and external use.

## USES

Sealing joints for:

- Movement and connections
- Facade elements
- Vertical and horizontal applications
- Window and door frames
- Reglets
- Flashing
- Common roofing detailing
- Canal and reservoir submerged joints.

Adhesive for:

- Most construction components and materials

## CHARACTERISTICS / ADVANTAGES

- 1-part no mixing equipment required
- Fast tack-free and final cure times
- High elasticity and flexibility
- Good cut and tear resistance
- Low stress on substrate
- Good adhesion to many construction materials
- Primerless for most substrates and applications
- Resistant to weathering and ageing
- Suitable for use in most global conditions
- Can be applied to green concrete 24 hours after pour
- Can be applied to damp concrete 1 hour after getting wet
- Low VOC emissions
- Resistant to jet fuel exposure
- Certified to the NSF/ANSI Standard 61 for potable water
- Urethane-based, suggested by EPA for radon reduction
- Over-paintable with oil and rubber based paints
- Movement capability  $\pm 35\%$  (ASTM C 719)

## APPROVALS / STANDARDS

- Certified to NSF/ANSI standard 61 for portable water

## PRODUCT INFORMATION

Chemical Base	Polyurethane
Packaging	10 fl. oz. cartridge, 12 cartridges per box 20 fl. oz. foil pack, 20 foil packs per box 5 gallon pail 55 gallon drum Refer to current price list for packaging variations
Shelf Life	Cartridges and foil packs: 12 months from date of production Pails and drums: 6 months from date of production

<b>Storage Conditions</b>	The product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +41 °F and +77 °F (+5 °C and +25 °C). Always refer to packaging.	
<b>Colour</b>	Colour range to be defined by local sales organisation.	
<b>Density</b>	~1,45 kg/l (95 lbs/ft³)	(ISO 1183-1)

## TECHNICAL INFORMATION

Shore A Hardness	~40 (after 21 days) ~40 (after 28 days)		(ASTM C 661) (ISO 868)	
Tensile stress at specified elongation	25 %	~35 psi (0,24 N/mm²)	(ASTM D 412)	
	50 %	~60 psi (0,41 N/mm²)		
	100 %	~85 psi (0,59 N/mm²)		
Secant Tensile Modulus	~0,55 N/mm² (80 psi) at 60 % elongation (23 °C) ~0,90 N/mm² (131 psi) at 60 % elongation (–20 °C)		(ISO 8339)	
Elongation at Break	~550 %		(ASTM D 412)	
	~450 %		(ISO 37)	
Movement Capability	±35 %		(ASTM C 719)	
	±25 %		(ISO 9047)	
Adhesion in Peel	Substrate	Peel Strength	Adhesion loss	(ASTM C 794)
	Concrete	~20 lbs (~9 kg)	0 %	
	Aluminium	~20 lbs (~9 kg)	0 %	
	Glass	~20 lbs (~9 kg)	0 %	
Elastic Recovery	~90 %		(ISO 7389)	
Tear Strength	~55 lbs./in. (~10 N/ mm)		(ASTM D 624)	
Service Temperature	–40 °F to +170 °F (–40 °C to +77 °C)			
Chemical Resistance	Resistant to many chemicals. Contact Sika Technical Services for additional information			
Resistance to Weathering	0 (no cracks)		(ASTM C 793)	

### Joint Design

The joint dimensions must be designed to suit the movement capability of the sealant. The joint width must be  $\geq 6,0$  mm ( $\frac{1}{4}$  inch) and  $\leq 40$  mm ( $1\frac{1}{2}$  inch). The joint depth must be  $\geq 6,0$  mm ( $\frac{1}{4}$  inch) and  $\leq 12$  mm ( $\frac{1}{2}$  inch). For joints in facades a width to depth ratio of 2:1 must be maintained (for exceptions, see table below). For floor joints a width to depth ratio of 1:0.8 must be maintained. For use in horizontal joints in traffic areas, the absolute minimum depth of the sealant is 12 mm ( $\frac{1}{2}$  inch).

Standard joint widths for joints between concrete facade elements:

#### Standard joint widths for joints between concrete facade elements:

Joint distance m	Min. joint width mm	Min. joint depth mm
2	10	10
4	15	10
6	20	10
8	28	14
10	35	17

The above information is for guidance only. All joints must be correctly designed and dimensioned in accordance with the relevant national standards and codes of practice before their construction. The basis for calculation of the necessary joint widths are the type of structure, dimensions, technical values of the adjacent building materials, joint sealing material and the specific exposure of the building and the joints.

## APPLICATION INFORMATION

Consumption	Joint width mm	Joint depth mm	Joint length m per sausage (600 ml)
	10	10	6
	15	10	4
	20	10	3
	25	12	2
	30	15	1,3
	Joint width mm	Joint depth mm	Joint length m per cartridge (300 ml)
	10	10	3
	15	10	2
	20	10	1,5
	25	12	1
	30	15	0,65
	Joint width inch	Joint depth inch	Joint length ft per sausage (20 fl.oz.)
	$\frac{1}{2}$	$\frac{1}{4}$	24,4
	$\frac{3}{4}$	$\frac{3}{8}$	5,4
	1	$\frac{1}{2}$	3
	$1\frac{1}{2}$	$\frac{3}{4}$	1,4
	Joint width inch	Joint depth inch	Joint length ft per cartridge (10 fl.oz.)
	$\frac{1}{2}$	$\frac{1}{4}$	12,2
	$\frac{3}{4}$	$\frac{3}{8}$	5,4
	1	$\frac{1}{2}$	3
	$1\frac{1}{2}$	$\frac{3}{4}$	1,4
	Joint width inch	Joint depth inch	Joint length ft per gallon
	$\frac{1}{2}$	$\frac{1}{4}$	154
	$\frac{3}{4}$	$\frac{3}{8}$	68,4
	1	$\frac{1}{2}$	38,5
	$1\frac{1}{2}$	$\frac{3}{4}$	17,1
	Joint width inches	Joint depth inches	Joint length ft per gallon
	$\frac{1}{4}$	$\frac{1}{4}$	308
	$\frac{3}{8}$	$\frac{1}{4}$	205
	$\frac{3}{8}$	$\frac{3}{8}$	137
	$\frac{1}{2}$	$\frac{1}{4}$	154
	$\frac{1}{2}$	$\frac{3}{8}$	102
	$\frac{1}{2}$	$\frac{1}{2}$	77
	$\frac{3}{4}$	$\frac{1}{4}$	103
	$\frac{3}{4}$	$\frac{3}{8}$	68
	$\frac{3}{4}$	$\frac{1}{2}$	51
	1	$\frac{1}{2}$	39
	$1\frac{1}{4}$	$\frac{1}{2}$	31
	$1\frac{1}{2}$	$\frac{1}{2}$	26

Consumption depends on the roughness and absorbency of the substrate. These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc.

Ambient Air Temperature	+40 °F to +100 °F (+4 °C to +38 °C)
-------------------------	-------------------------------------

<b>Substrate Temperature</b>	+40 °F to +100 °F (+4 °C to +38 °C). Min. 5 °F (3 °C) above dew point temperature Sealants must be installed when substrates are at mid-range of their anticipated movement.	
<b>Backing Material</b>	Use closed cell, polyethylene foam backing rods.	
<b>Skin Time</b>	~160 minutes (23 °C / 50 % r.h.)	(CQP 019-1)
<b>Tack Free Time</b>	~160 minutes (23 °C / 50 % r.h.)	(ASTM C 679)

## BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

## FURTHER DOCUMENTS

- Pre-treatment Sealing and Bonding Chart
- Method Statement: Joint Sealing
- Method Statement: Joint Maintenance, Cleaning and Renovation
- Technical Manual: Facade Sealing

## LIMITATIONS

- Allow full curing before using Sikaflex®-1A in total water immersion situations.
- Sikaflex®-1A can be overpainted with most conventional facade coating paint systems. However, paints must first be tested to ensure compatibility by carrying out preliminary trials. The best over-painting results are obtained when the sealant is allowed to fully cure first. Note: non-flexible paint systems may impair the elasticity of the sealant and lead to cracking of the paint film.
- Do not cure in the presence of curing silicones.
- Do not expose uncured Sikaflex®-1A to alcohol containing products as this may interfere with the curing reaction.
- Do not apply when moisture-cured-transmission condition exists from the substrate as this can cause bubbling within the sealant.
- Use opened cartridges and uni-pac sausages the same day.
- Since the system is moisture-cured, permit sufficient exposure to air.
- Color variations may occur due to exposure to chemicals, high temperatures and/or UV-radiation (especially with the colour shade white). However, a change in color is purely of aesthetic nature and does not adversely influence the technical performance or durability of the product.
- The ultimate performance of Sikaflex®-1A depends on good joint design and proper application with joint surfaces properly prepared.
- Do not use Sikaflex®-1A on bituminous substrates, natural rubber, EPDM rubber or on any building materials which might bleed oils, plasticizers or solvents that could attack the sealant.
- Do not use Sikaflex®-1A on natural stone.
- Do not use Sikaflex®-1A to seal joints in and around swimming pools.

## ECOLOGY

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

## APPLICATION INSTRUCTIONS

### SUBSTRATE PREPARATION

The substrate must be sound, clean, dry and free of all contaminants such as dirt, oil, grease, cement laitance, old sealants and poorly bonded paint coatings which could affect adhesion of the sealant. The substrate must be of sufficient strength to resist the stresses induced by the sealant during movement.

Removal techniques such as wire brushing, grinding, grit blasting or other suitable mechanical tools can be used.

Repair all damaged joint edges with suitable Sika repair products

New or refurbished joints must be saw-cut.

Where joints in substrate are saw cut. After sawing, all slurry material, must be flushed away and joint surfaces allowed to dry.

All dust, loose and friable material must be completely removed from all surfaces before application of any activators, primers or sealant.

Sikaflex®-1A adheres without primers and/or activators.

For optimum adhesion, joint durability and critical, high performance applications such as joints on multi-storey buildings, highly stressed joints, extreme weather exposure or water immersion / exposure. The following priming and/or pre-treatment procedures must be followed:

### Non-porous substrates

Aluminium, anodised aluminium, stainless steel, PVC, galvanised steel, powder coated metals or glazed tiles. Slightly roughen surface with a fine abrasive pad.

Clean and pre-treat using Sika® Aktivator-205 applied with a clean cloth.

Before sealing, allow a waiting time of > 15 minutes (< 6 hours).

Other metals, such as copper, brass and titanium-zinc, cleaned and pre-treat using Sika® Aktivator-205 applied with a clean cloth. After a waiting time of > 15 minutes (< 6 hours). Apply Sika® Primer-3 N applied by brush. Before sealing, allow a waiting time of > 30 minutes (< 8 hours)

PVC has to be cleaned and pre-treated using Sika® Primer-215 applied with a brush. Before sealing, allow a waiting time of > 30 minutes (< 8 hours).

### Porous substrates

Concrete, aerated concrete and cement based renders, mortars and bricks must be primed using Sika® Primer-3 N applied with a brush. Before sealing, allow a waiting time of > 30 minutes (< 8 hours).

Adhesion tests on project specific substrates must be performed and procedures agreed with all parties before full project application. Contact Sika Technical Services for additional information.

Note: Primers and activators are adhesion promoters and not an alternative to improve poor preparation / cleaning of the joint surface. Primers also improve the long term adhesion performance of the sealed joint. For green concrete applications control joints must be cut 8 hours prior to sealant installation. Expansion joint

forms must be removed 4 hours prior to sealant installation. For wet concrete applications all excess or standing water

must be displaced and concrete must then dry for a minimum of 60 minutes prior to sealant installation. Sikaflex-1a can be applied on green concrete after the concrete has cured for a minimum of 24 hours at +75 °F (+25 °C).

### MIXING

1-part ready to use

### APPLICATION METHOD / TOOLS

Reference must be made to further documentation where applicable, such as relevant method statement, application manual and installation or working instructions.

#### Masking

It is recommended to use masking tape where neat or exact joint lines are required. Remove the tape within the skin time after finishing.

#### Joint Backing

After the required substrate preparation, insert a suitable backing rod to the required depth.

#### Priming

If required, prime the joint surfaces as recommended in substrate preparation. Avoid excessive application of primer to avoid causing puddles at the base of the joint.

#### Application

Sikaflex®-1A is supplied ready to use.

Prepare the end of the foil pack or cartridge, insert into the sealant gun and fit the nozzle. Extrude Sikaflex®-1A into the joint ensuring that it comes into full contact with the sides of the joint and avoiding any air entrapment.

#### Finishing

As soon as possible after application, sealant must be firmly tooled against the joint sides to ensure adequate adhesion and a smooth finish.

Use a compatible tooling agent (e.g. Sika® Tooling Agent N) to smooth the joint surface. Water can be used. Do not use tooling products containing solvents.

### CLEANING OF TOOLS

Clean all tools and application equipment with Sika® Remover-208 immediately after use. Hardened material can only be removed mechanically.

For cleaning skin use Sika® Cleaning Wipes-100.

### LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

## LEGAL NOTES

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 in accordance with Sika's recommendations. 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 written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

### **Sika Taiwan Ltd.**

15F.-1, No. 83, Sec. 1, Nankan Rd.  
Luzhu District  
Taoyuan City 338207, Taiwan (R.O.C.)  
TEL: 03 352 8622 . FAX: 03 352 0470  
Info: sika@tw.sika.com  
web: tw.sika.com



### **Product Data Sheet**

**Sikaflex®-1A**

April 2022, Version 01.01  
020511010000000008

Sikaflex-1A-en-TW-(04-2022)-1-1.pdf