Product Data Sheet
Edition 28 July 2017

Construction

Sikaflex® Construction (AP)

1-part high performance polyurethane sealant for building joints

Product Description	Sikaflex® Construction (AP) is a one part, moisture curing, elastic joint sealant based on polyurethane. It is suitable for indoor and outdoor applications, in some cases without the need for priming of the substrate.
Uses	Sikaflex® Construction (AP) is used as an elastic general purpose sealant for sealing joints in building construction such as movement and construction/isolation joints around window and door frames, facades, claddings etc. in concrete, brick, wood, metal and PVC sections and structures etc. ■ Expansion joints in buildings and civil structures above and below ground. ■ External walling and cladding joints. ■ Sealing around window and door frames. ■ Construction joints. ■ Infill panel joints. ■ Joints in precast concrete elements. ■ Sealing penetrations in walls or floors for ducts, piping etc. ■ Retaining walls. ■ Curtain walling. ■ Sanitary installations.
Characteristics / Advantages	■ Sikaflex® Construction (AP) will bond well to well cleaned Sikaflex® Construction (AP). ■ Excellent adhesion on all cement based materials, brick ceramics, polyurethane, epoxy, most polyester, most metals and most timbers. ■ Good weathering resistance. ■ Short skinning time. ■ Short cut off string, even after storage. ■ Non-sag on vertical and soffit joints up to 30 mm width. ■ Ready for immediate use – no mixing, saves time. ■ Can be painted over with many water, solvent and rubber based paints (preliminary tests recommended). ■ No potential mixing errors or wastage due to mixed quantities being greater than required. ■ Non-corrosive. ■ Resistant to bacterial attack.

Tests

Approval / Standard	ISO 11600 (Type F Class 25HM/20LM) Queensland Department of Transport and Main Roads Specification: MRTS77

Product Data

Colours	Concrete Grey, Black, White
Packaging	600 ml sausages, 20 sausages per box

Storage

Storage Conditions / Shelf Life	12 months from date of production if stored in undamaged original sealed containers, in dry conditions and protected from direct sunlight at temperatures between +10°C and +25°C.

Technical Data

Chemical Base	1-part polyurethane, moisture curing	
Density	~ 1.3 kg/l (colour concrete grey)	(DIN 53479)
Skinning Time	2 - 4 hours (+23°C / 50% r.h.)	
Curing Rate	2 mm/24 hours (+23°C / 50% r.h.)	
Movement Capability	+/- 25%	
Joint Dimensions	Min. width = 8 mm / max. width = 35 mm	
Sag-Flow	0 mm, very good	(DIN EN ISO 7390)
Service Temperature	-30°C to +70°C	

Mechanical / Physical Properties		
Tear Strength	> 6 N/mm (+23°C / 50% r.h.)	(DIN 53515)
Shore A Hardness	23-27 after 28 days (+23°C / 50% r.h.)	(DIN 53505)
E-Modulus	~ 0.5 N/mm^2 at 100% elongation (+23°C / 50% r.h.)	(DIN EN ISO 8340)
Elongation at Break	> 500% (+23°C / 50% r.h.)	(DIN 53504)
Elastic Recovery	> 80% (+23°C / 50% r.h.)	(DIN EN ISO 7389 B)

System Information

Substrate Preparation	Clean, sound, dry and free of oil, grease and surface contaminants such as form release agents, curing membranes and hydrophobic water repellents. Any loose particles or laitance should be removed with a rotary mechanical wire brush followed by blowing out with oil free compressed air. Use Sika cementitious or epoxy mortars for making good spalled or damaged joints.
Priming	Refer to Primer Selection Guide for detailed information. (This is a separate document).
Substrate Quality	Clean and dry, homogeneous, free from oils and grease, dust and loose or friable particles. Cement laitance must be removed.
Application	Minimum application temperature 5°C. For easier use we recommend the material is stored between 10°C and 30°C prior to use. Sikaflex® Construction (AP) is available in 600 ml unipac. Slide unipac into the special applicator gun, then either “nick” the unipac wrapper at the extrusion end or cut off the very end of the sausage if it contains partially cured lumpy Sikaflex. Fit the gun with a suitable nozzle that has been cut to deliver the right bead size. All primer on joint sides, which is generally applied after backer rods or release tapes are in place (refer joint design section) must have not exceeded it’s open time and it must be thoroughly dry and not just skinned over; otherwise in conditions of rising temperature trapped solvent can blow bubbles in the uncured sealant. Porous substrates such as poorly compacted or cracked concrete must have their porous bond area surfaces thoroughly sealed to avoid the possibility of air bubbles being blown into the uncured sealant if the substrate temperature rises. Extrude the Sikaflex into the joint ensuring that no air is trapped in the joint. Wide joints will require more than one pass of the application gun to make sure that Sikaflex is in full contact with the sides and bottom of the joint. Tooling-off the sealant will assist by forcing the sealant into the joint against its sides and back up material; this will also break any air bubbles and expose any air pockets. Final tooling of the joint surface can be done effectively with a spatula dipped in a 20% solution of washing up detergent in water (test to ensure it does not discolour the cured Sikaflex) or a profiled piece of raw potato. When tooling off with detergent solution, ensure no solution is allowed to get onto adjacent joint sides/bonding areas before the sealant has reached the final tooling stage in those locations. When masking sides of joints for neatness, remove tape before the sealant cures. Always allow sufficient surface exposed to moisture. In conditions of low atmospheric humidity, say less than 45% R.H. at 20°C or <60% R.H. at 10°C when early joint movement is anticipated (eg. The joint has been sealed in the late afternoon sun and at sunset a rapid temperature drop is expected – Canberra or Alice Springs in winter), it is advisable to spray the surface of the tooled Sikaflex with a fine mist of water to promote early skinning. Seal joints in walls facing west in the morning.

Consumption

Sika Primer 1, 15) About 4-5m² per litre of primer.
Sika Primer 3N) 250 ml can of primer will normally be sufficient
Sika Primer 215) for about 35-40 running metres of

Sika Adhesive Cleaner 1: approx. 5-8 m²/litre

Sikaflex Estimating Chart

Quantities: a guide to Sikaflex® Construction (AP) quantities (for fillet work multiply metre runs per cartridge or 'unipac' by two).

Joint size in mm	Litre Sikaflex-PRO per metre run	Metre run per cartridge (310ml)	Metre run per 'unipac' (600 ml)
5 x 5	0.025	12.4	24
5 x 10	0.050	6.2	12
5 x 15	0.075	4.2	8.0
10 x 10	0.100	3.1	6.0
10 x 15	0.150	2.0	4.0
10 x 20	0.200	1.55	3.0
10 x 25	0.250	1.24	2.4
15 x 10	0.150	2.06	3.9
15 x 15	0.225	1.35	2.7
15 x 20	0.300	1.04	2.0
15 x 25	0.375	0.82	1.6
15 x 30	0.450	0.69	1.3
15 x 40	0.600	0.51	1.0
20 x 10	0.200	1.55	3.0
20 x 15	0.050	1.04	2.0
20 x 20	0.400	0.78	1.5
25 x 12.5	0.310	1.00	2.0
25 x 15	0.380	0.81	1.6
25 x 20	0.500	0.62	1.2
25 x 25	0.630	0.50	0.9
30 x 15	0.450	0.69	1.3
30 x 20	0.600	0.51	1.0
30 x 25	0.750	0.42	0.8
40 x 20	0.800	0.39	0.8
40 x 25	1.000	0.31	0.6
40 x 30	1.200	0.26	0.5

EXPANSION JOINT DESIGN CRITERIA

Usually the joint has the following geometry:

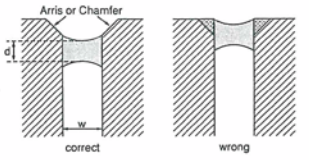
For joint widths up to 12 mm

$\frac{\text{width}}{\text{depth}} = \frac{1}{1}$ or w = d

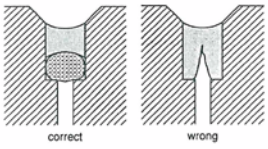
For joint widths 12 mm to 50 mm

$\frac{\text{width}}{\text{depth}} = \frac{1}{0.5}$ or w = 2d

For concrete and masonry joints subject to movement the depth of the Sikaflex-PRO in the joint has to be at least 8 mm.

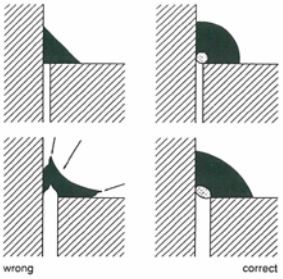


The edges or corners of concrete joints are often weak because of poorly compacted concrete, thus it is desirable to use chamfers and recess the joint.



The "bottom" of the joint must not restrict the deformation of the sealant since this could result in failure during the opening of the joint. The depth of the joint should be adjusted by inserting a suitable joint backing material.

In corner joints too, the insertion of a release tape or backer rod is required, otherwise the sealant will fail during expansion of the joint.



Cleaning of Tools

Use Sika Colma Cleaner to remove uncured sealant from tools after first removing the bulk of the Sikaflex material with a scraper followed by a rag or paper tissue. Sikaflex Hand Cleaner will remove fresh and partially cured Sikaflex from the skin. Hardened material can only be removed mechanically.

Substrate Temperature	+5°C min. / +35°C max.
Ambient Temperature	+5°C min. / +35°C max.
Substrate Moisture Content	Dry

Chemical Resistance (Rough guide only)

Long Term	Medium Term	Low to Very Low
Water	Mineral oils	Organic solvents
Sea water	Vegetable oils	Paint dilutents
Dilute mineral acids	Fats	Strong acids
Dilute mineral alkalis	Swimming/spa	Strong alkalis
Domestic sewage	Pool water	
	Fuel oils	

Notes on Application / Limitations

- Sikaflex® Construction (AP) is best stored at temperatures between 10°C and 25°C in dry areas. The storage temperature should not exceed 30°C for extended periods.
- For best results use opened cartridge or sausage the same day otherwise the Sikaflex® Construction (AP) in the nozzle will cure and have to be removed.
- When applying sealant, avoid air entrapment.
- Joint movement must not exceed ±30% (above 0°C) of the width of the joint at the time it is sealed.
- Minimum joint width for caulking around window frames is 10mm.
- White coloured sealant, in certain situations may yellow. This does not affect the performance of the sealant.
- Sikaflex® Construction (AP) in White is not recommended for Kitchen and Bathroom tile joint sealing as the sealant can discolour. Sikasil PRO or SikaSeal Kitchen & Bathroom are recommended for this application.
- White coloured sealant can be discoloured if detergent tooling aids are used.
- Joints in low humidity environments should be sprayed with a mist of water as soon as tooling off is complete to accelerate the curing process and minimise the risk of early movement cracks.
- For specific chemical resistance please contact our Technical Service Department.
- If there is no history of a particular coating/paint being applied over cured Sikaflex® Construction (AP) for a period of 6 months or more an over paintability test should be made to determine:

  i) That the paint dries properly within the expected time frame.

  ii) That if the paint film dries satisfactorily it is not subsequently softened and/or stained where it comes into contact with the Sikaflex-PRO when exposed to the heat of the sun.

  iii) That the adhesion of the paint/coating is satisfactory to the Sikaflex® Construction (AP).

  Conduct a simple test, overpaint a cured sample of Sikaflex® Construction (AP), allow the normal drying time for the coating to elapse and then expose it to a temperature of 80°C continuously for seven days. Sika's Technical Department can conduct this testing.
- Do not paint Sikaflex® Construction (AP) with Sikagard-680S – it will not dry satisfactorily.
- Do not use mineral turpentine or solvent based solutions as tooling aids.
- Do not use Sikaflex® Construction (AP) to seal joints in chlorinated swimming pools or spa pools because occasional over dosing with chlorine etc. can eventually cause the Sikaflex® Construction (AP) surface to become sticky.
- Where possible backer rod should be placed in a joint before it is primed.
- Do not twist or puncture closed cell polyethylene backer rod during installation, this can lead to "out gassing". The gas from the backer rod blows bubbles into freshly applied Sikaflex® Construction (AP) during conditions of rising temperature.
- Open cell backer rod allows moist air access to the bottom of the joint so that the Sikaflex® Construction (AP) can cure simultaneously from the front and back of the joint.
- Sikaflex® Construction (AP) should be used with care in resealing joints that were previously filled with silicone sealant. Consult out Technical Department.
- Not to be used in glazing applications where the Sikaflex to glass bond is exposed to direct or indirect sunlight or UV radiation.
- Alcohol containing solvents should not be used as a tooling aid, as these will inhibit the cure of polyurethane adhesives / sealants.
- Epoxy resin coatings should be fully cured prior to the application of the adhesive / sealant as the uncured amine component could inhibit the cure of polyurethane adhesives / sealants.

Construction

Handling Precautions	Sika sealants are generally harmless provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should also be taken to prevent the uncured materials from coming into contact with the skin, since people with particularly sensitive skin may be affected. The use of protecting clothing, goggles, barrier creams and rubber gloves is recommended. The skin should be thoroughly cleansed at the end of each working period either by washing with soap and warm water or by using a resin removing cream – the use of powerful solvents is to be avoided. Disposable paper towels, not cloth towels should be used to dry the skin. Adequate ventilation of the working area is recommended. In case of accidental eye or mouth contact, flush with water. Consult a doctor immediately.
Important Notification	The information, and, in particular, the recommendations relating to the application and end-use of Sika's 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 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 proprietary rights of third parties must be observed. All orders are accepted subject of our terms and conditions of sale. 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. PLEASE CONSULT OUR TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.

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