Industry

Sikaflex®-221

One-component adhesive sealant

Technical Product Data

Chemical base	1-C polyurethane
Colour (CQP[1] 001-1)	White, grey, black, blue
Curing mechanism	Humidity-curing
Density (uncured) (CQP 006-4)	1.3kg/L approx. depending on colour
Non-sag properties	Good
Application temperature (Adhesive&Substrate)	5 ℃ - 40 ℃
Tack free time[2] (CQP 019-1)	60 min. approx.
Open time[2] (CQP 526-1)	45 min. approx.
Curing speed (CQP 049-1)	(see diagram)
Shrinkage (CQP 014-1)	5 % approx.
Shore A-hardness (CQP 023-1 / ISO 868)	40 approx.
Tensile strength (CQP 036-1 / ISO 37)	1.8 MPa approx.
Elongation at break (CQP 036-1 / ISO 37)	500 % approx.
Tear propagation resistance (CQP 045-1 / ISO 34)	7 N/mm approx.
Glass transition temperature (CQP 509-1 / ISO 4663)	-45 ℃approx.
Thermal resistance (CQP 513-1)	90 ℃approx.
Short time 1 day	120 ℃approx.
1 hour	140 ℃approx.
Service temperature	-40~90 ℃
Shelf life (storage below 25℃) (CQP 016-1)	12 months

[1] CQP = Corporate Quality Procedure [2] 23°C / 50% r.h.

Description

Sikaflex®-221 is a high-quality multi purose non-sag 1-c polyurethane sealant that cures on exposure to atmospheric humidity to form a durable elastomer. For US: Meets approvals ASTM C920 types and Federal Specifications TT-S-00230C.
Sikaflex®-221 is manufactured in accordance with ISO 9001/14001 quality assurance system and environment management system the responsible care program.

Product Benefits

- 1-C formulation
- Elastic
- Low odour
- Resistant to ageing
- Non-corrosive
- Can be overpainted
- Can be sanded
- Bonds well to a wide variety of substrates
- NSF-approved for incidental food contact

Areas of Application

Sikaflex®-221 bonds well to a wide variety of substrates and is suitable for making permanent elastic seals of high adhesive strength. Suitable substrate materials are metals, metal primers and paint coatings (2-c systems), ceramic materials and plastics.
Seek manufacturer's advice before using on transparent and pigmented materials that are prone to stress cracking.
This product is suitable for experienced professional users only. Test with actual substrates and conditions have to be performed to ensure adhesion and material compatibility.

Cure Mechanism

Sikaflex®-221 cures by reaction with atmospheric moisture. At low temperatures the water content of the air is generally lower and the curing reaction proceeds somewhat slower (see diagram)

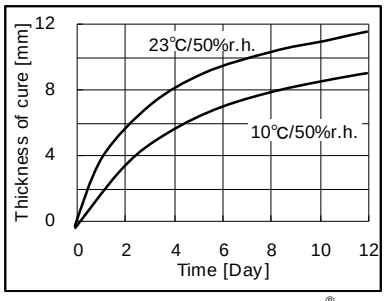

Diagram 1: Curing speed for Sikaflex®-221

Chemical Resistance

Sikaflex®-221 is resistant to fresh water, seawater, limewater, sewage effluent, diluted acids and caustic solutions; temporarily resistant to fuels, mineral oils, vegetable and animal fats and oils; not resistant to organic acids, alcohol, concentrated mineral acids and caustic solutions or solvents.

The above information is offered for general guidance only. Advice on specific applications will be given on request.

Method of Application

Surface preparation

Surfaces must be clean, dry and free from all traces of grease, oil and dust. As a rule, the substrates must be prepared in accordance with the instructions given in the current Sika Primer Chart

Advice on specific applications is available from the Technical Service Department of Sika Industry.

Application

Cartridges: Pierce cartridge membrane.

Unipacks: Place unipack in the application gun and snip off the closure clip.

Cut off the tip of the nozzle to suit joint width and apply the sealant into the joint with a suitable hand operated or compressed-air gun, taking care to avoid air entrapment. Once opened, packs should be used up within a relatively short time.

The optimum temperature for substrate and sealant is between 15 °C and 25°C.

For advice on selecting and setting up a suitable pump system, as well as on the techniques of pump operated application, please contact the System Engineering Department of Sika Industry.

Tooling and finishing

Tooling and finishing must be carried out within the tack-free time of the sealant. We recommend the use of Sika®Tooling Agent N.

Other finishing agents or lubricants must be tested for suitability / compatibility.

Removal

Uncured Sikaflex®-221 can be removed from tools and equipment with Sika® Remover-208 or an other suitable solvent. Once cured, the material can only be removed mechanically.

Hands and exposed skin should be washed immediately using Sika® Handclean Towel or a suitable industrial hand cleaner and water. Do not use solvents!

Overpainting

Sikaflex®-221 can be over-painted with most conventional paint systems.

The paint must be tested for compatibility by carrying out preliminary trials and the best results are obtained if the sealant is allowed to cure fully first, especially in the case of baked enamels. Please note that nonflexible paint systems may impair the elasticity of the adhesive, impair joint movement and lead to cracking of the paint film.

PVC based paints and paints that dry by oxidation (oil or alkyd resing based) are generally not suitable for application over Sikaflex®-221.

Further Information

Copies of the following publications are available on request:

- Material Safety Data Sheets
- Sika Pre-treatment Chart for 1-component Polyurethanes
- General Guidelines Bonding and Sealing with Sikaflex®.

Packaging Information

Cartridge	310mL× 12 pc / box 310mL x 20 pc / box
Unipack	400mL × 20 pc / box 600mL x 20 pc / box

Value Basis

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

Health and Safety Information

For information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Material Safety Data Sheets containing physical, ecological, toxicological and other safety-related data.

Legal Notes

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