Sikaflex®-221

One component adhesive sealant

Industry

Technical Product Data

Chemical base		1-C polyurethane
Colour (CQP[1] 001-1)		White, grey, black, brown
Cure mechanism		Moisture-curing
Density (uncured) (CQP 006-4)		1.3 kg/l approx. depending on colour
Non-sag properties		Good
Application temperature		5°C - 40°C
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 1
Shrinkage (CQP 014-1)		5% approx.
Shore A hardness (CQP 023-1 / ISO 868)		40 approx.
Tensile strength (CQP 036-1 / ISO 37)		1.8N/mm^2 approx.
Elongation at break (CQP 036-1 / ISO 37)		500% approx.
Tear propagation resistance (CQP 045-1 / ISO 34)		6N/mm approx.
Movement accommodation factor		12.5%
Glass transition temperature (CQP 509-1 / ISO 4663)		-45°C approx.
Service temperature (CQP 513-1) Short term	permanent 1 day 1 hour	-40°C to 90°C 120°C 140°C
Shelf life (storage below 25°C) (CQP 016-1)	cartridge / unipack drum / hobbock	12 months 12 months

[1] CQP = Corporate Quality Procedure [2] 23°C (73°F) / 50% r.h.

Description

Sikaflex®-221 is a high-quality multi purpose 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 with the responsible care program.

Product Benefits

- 1-C formulation
- Elastic
- Low odour
- Resistant to ageing and weathering exposure
- Non-corrosive
- Can be over-painted
- 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 timber, 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 professional experienced users only. Tests 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 oft the air is generally lower and the curing reaction proceeds somewhat slower (see diagram).

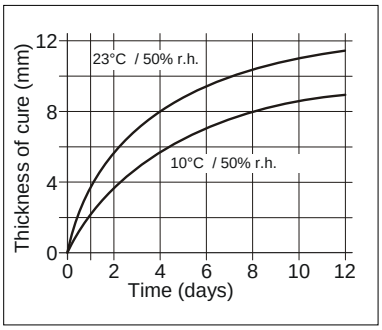

Diagram 1: Curing speed for Sikaflex®221

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.
Unipacs: Place unipac 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.
Do not apply at temperatures below 5°C or above 40°C. 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 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 and compatibility.

Removal
Uncured Sikaflex®-221 may be removed from tools and equipment with Sika® Remover-208 or another 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 non-flexible 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 resin based) are generally not suitable for application over Sikaflex®-221 and two pack paint systems are preferred.

Further Information

Copies of the following publications are available on request:
- Material Safety Data Sheets
- Sika Primer Chart
- General Guidelines Bonding and Sealing with Sikaflex® products

Packaging Information

Cartridge	310 ml
Unipac	400 + 600 ml
Hobbock	23 l
Drum	195 l

Value Bases

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.

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

Further information available at:
www.sika.co.uk
www.sika.com

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