

Sikasil®-3180

High temperature sealant

Technical Product Data

Chemical base	1-C silicone
Colour (CQP ¹ 001-1)	Translucent, Red
Cure mechanism	Moisture-curing
Cure type	Acetoxy
Density (uncured) (CQP 006-4)	1.03 kg/l approx.
Non-sag properties (CQP 061-4 / ISO 7390)	< 2 mm approx.
Application temperature	5 - 40°C (41 - 104°F)
Skin time ² (CQP 019-2)	10 min approx.
Tack-free time ² (CQP 019-1)	90 min approx.
Curing speed (CQP 049-1)	See diagram 1
Shore A-hardness (CQP 023-1 / ISO 868)	25 approx.
Tensile strength (CQP 036-1 / ISO 37)	1.3 N/mm ² approx.
Elongation at break (CQP 036-1 / ISO 37)	400% approx.
Tear propagation resistance (CQP 045-1 / ISO 34)	4 N/mm approx.
100% modulus (CQP 036-1 / ISO 37)	0.5 N/mm ² approx.
Movement accommodation capability (ASTM C 719)	± 25%
Thermal resistance (CQP 513-1)	250 °C (480 °F) approx.
Short term	4 hours 275 °C (530 °F) approx. 1 hour 300 °C (570 °F) approx.
Service temperature	-40 - 220°C approx. (-40 - 430°F)
Shelf life (storage below 25°C) (CQP 016-1)	18 months

¹⁾ CQP = Corporate Quality Procedure

²⁾ 23 °C (73 °F) / 50% r.h.

Description

Sikasil®-3180 is a silicone sealant which retains its elastomeric properties for long periods at temperatures up to 250°C and short-term up to 300°C.

Sikasil®-3180 is manufactured in accordance with ISO 9001 / 14001 quality assurance system and the responsible care program.

Product Benefits

- Outstanding heat resistance
- Excellent UV and weathering resistance
- Fast curing

Areas of Application

Sikasil®-3180 is well suited as a "Formed-in-Place-Gasket" (FIPG) material for flange sealing, e. g. on transmissions, compressors and pumps. It can be used for all industrial sealing applications where high temperature resistance is required.

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.

Industry



Cure Mechanism

Sikasil®-3180 cures by reaction with atmospheric moisture. The reaction thus starts at the surface and proceeds to the core of the joint. The curing speed depends on the relative humidity and the temperature (see diagram 1 below). Heating above 50°C to speed-up the vulcanization is not advisable as it may lead to bubble formation. At low temperatures the water content of the air is lower and the curing reaction proceeds more slowly.

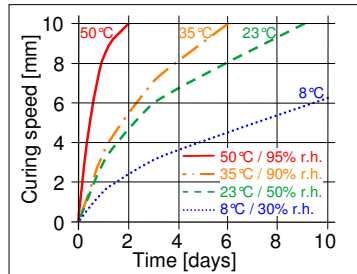


Diagram 1: Curing speed 1C-Sikasil®

Application Limits

Most Sikasil® WS, FS, SG, IG, WT, AS and other engineering silicone sealants manufactured by Sika are compatible with each other and with SikaGlaze® IG sealants. For specific information regarding compatibility between various Sikasil® and SikaGlaze® products please contact the Technical Service Department of Sika Industry.

Do not use Sikasil®-3180 on pre-stressed polyacrylate and polycarbonate elements as it may cause environmental stress cracking (crazing).

Since Sikasil®-3180 releases acetic acid vapors during the curing process it may not be suitable for certain substrates.

The compatibility of gaskets, backer rods and other accessory materials with Sikasil®-3180 must be tested in advance.

Joints deeper than 15 mm should be avoided.

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 oil, grease and dust.

Advice on specific applications and surface pretreatment methods is available from the Technical Service Department of Sika Industry.

Application

After suitable joint and substrate preparation, Sikasil®-3180 is gunned into place. Joints must be properly dimensioned as changes are no longer possible after construction. For optimum performance the joint width should be designed according to the movement capability of the sealant based on the actual expected movement. Where broad surfaces are to be mated, the sealant should be applied in a thin, less than 6 mm (1/4 in.) diameter bead or ribbon around the edge of the surface to be sealed or bonded.

For more information please contact the Technical Service Department of Sika Industry.

Tooling and finishing

Tooling and finishing must be carried out within the skin time of the adhesive.

When tooling freshly applied Sikasil®-3180 press the adhesive to the joint flanks to get a good wetting of the bonding surface.

Removal

Uncured Sikasil®-3180 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 towels or a suitable industrial hand cleaner and water. Do not use solvents!

Overpainting

Sikasil®-3180 cannot be overpainted.

Further Information

Copies of the following publications are available on request:

- Material Safety Data Sheet

Packaging Information

Cartridge	300 ml
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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 shall refer to the actual Material Safety Data Sheets containing physical, ecological, toxicological and other safety-related 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.

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