

Sikaflex[®]-291

Multifunctional adhesive sealant for marine applications

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 to 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)	1.8 N/mm ² approx.
Elongation at break (CQP 036-1 / ISO 37)	500% approx.
Tear propagation resistance (CQP 045-1 / ISO 34)	6 N/mm approx.
Glass transition temperature (CQP 509-1 / ISO 4663)	-45°C approx.
Movement accommodation factor	12.5% approx.
Service temperature (CQP 513-1)	permanent -40°C to 90°C
Short term	4h 160°C 1h 180°C
Shelf life (storage below 25°C) (CQP 016-1)	cartridge / unipac 12 months

¹⁾ CQP = Corporate Quality Procedure

²⁾ 23°C (73°F) / 50% r.h.

Industry

Description

Sikaflex[®]-291 is a non-sag 1-C polyurethane sealant specifically developed for the marine market, which cures on exposure to atmospheric moisture to form a durable elastomer.

Sikaflex[®]-291 meets the requirements set out by the International Maritime Organisation (IMO).

Sikaflex[®]-291 is manufactured in accordance with the 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
- Non-corrosive
- Can be over-painted
- Can be sanded
- Bonds well to a wide variety of substrates
- Electrically non-conductive

Areas of Application

Sikaflex[®]-291 is a multipurpose product for use in marine construction. It is suitable for making elastic, vibration-resistant joint seals, and can also be used for a variety of interior and exterior sealing applications. Sikaflex[®]-291 bonds extremely well to the materials commonly used in marine construction like wood, metals, metal primers and paint coatings (2-c systems), ceramic materials and plastics (GRP, etc.). Sikaflex[®]-291 must not be used to seal plastics that are prone to stress cracking (e.g. Plexiglas, polycarbonate, etc.). Once cured, Sikaflex[®]-291 can easily be sanded down as required.



Cure Mechanism

Sikaflex®-291 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)

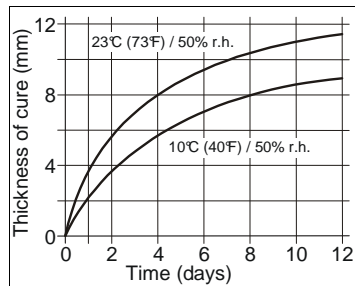


Diagram 1: Curing speed for Sikaflex®-291

Chemical Resistance

Sikaflex®-291 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. The adhesion of the sealant can be improved by wiping the joint with Sika® Cleaner (cleaning and activating agent) and applying the appropriate Sika® Primer.

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, 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®-291 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®-291 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®-291 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	300 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

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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