

Sikaflex[®]-291i

Multifunctional adhesive sealant for marine application

Technical Product Data

Chemical base		1-C polyurethane
Colour (CQP ¹ 001-1)		White, black
Cure mechanism		Moisture-curing
Density (uncured) (CQP 006-4)	(depending on colour)	1.3 kg/l approx.
Non-sag properties		Good
Application temperature	ambient	10 - 40°C (50 - 105°F)
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)		2% 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°C (-50°F) approx.
Service temperature (CQP 513-1)		-40 - 90°C (-40 - 195°F)
Short term	4 hours 1 hour	120°C (250°F) 140°C (285°F)
Shelf life (storage below 25°C) (CQP 016-1)		12 months

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

Description

Sikaflex[®]-291i is a non-sag 1-C polyurethane sealant specifically developed for the marine market, which cures on exposure to atmospheric moisture and forms a durable elastomer. Sikaflex[®]-291i meets in addition the low spread of flame requirements set out by the International Maritime Organisation (IMO).

Sikaflex[®]-291i is manufactured in accordance with the ISO 9001 / 14001 quality assurance system and with the responsible care program.

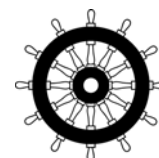
Product Benefits

- Wheelmark approved
- 1-C formulation
- Highly elastic
- Low odour
- Non-corrosive
- Can be over painted
- Bonds well to a wide variety of marine substrates
- VOC and emission free

Areas of Application

Sikaflex[®]-291i is a multipurpose product used in marine constructions. 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[®]-291i 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[®]-291i must not be used to seal plastics that are prone to stress cracking (e.g. PMMA, PC, etc.).

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®-291i cures by reaction with atmospheric moisture. At low temperatures the water content of the air is generally lower and the curing reaction proceeds slower (see diagram 1).

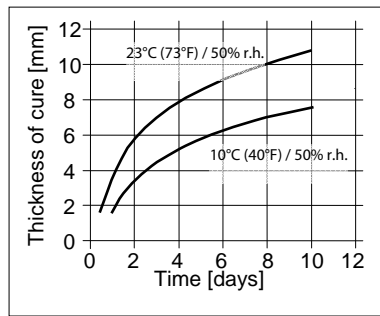


Diagram 1: Curing speed for Sikaflex®-291i

Chemical Resistance

Sikaflex®-291i 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 grease, oil and dust. The adhesion of the sealant can be improved by wiping the joint with Sika® Activator 205 and an appropriate Sika® Primer if required. Advice on specific applications is available from the Technical Service Department of Sika Industry.

Application

Cut off the tip of the nozzle to suit joint width and apply the sealant with a suitable hand operated or compressed-air gun, taking care to avoid air entrapment.



Do not apply at temperatures below 10°C or above 40°C. The optimum temperature for substrate and sealant is between 15°C and 25°C.

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®-291i can 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 cleanser and water. Do not use solvents!

Overpaintability

Sikaflex®-291i can be overpainted 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 to overpaint Sikaflex®-291i.

Further Information

Copies of the following publications are available on request:

- Material Safety Data Sheets
- Sika Pre-Treatment Chart for Marine Applications
- General Guidelines Bonding and Sealing with Sikaflex®

Packaging Information

Tube	100 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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