

Sikaflex®-591

Multifunctional sealant for marine applications

Technical Data

Chemical base	Silane Terminated Polymer
Colour (CQP ¹⁾ 001-1)	White
Cure mechanism	Moisture-curing
Density (uncured)	1.5 kg/l
Non-sag properties (CQP 061-1)	Very good
Application temperature	5 - 40°C
Skin time ² (CQP 019-1)	25 minutes
Open time ² (CQP 526-1)	20 minutes
Curing speed (CQP 049-1)	(see diagram)
Shrinkage (CQP 014-1)	1%
Shore A hardness (CQP 023-1 / ISO 868)	45
Tensile strength (CQP 036-1 / ISO 37)	2.5 MPa
Elongation at break (CQP 036-1 / ISO 37)	600%
Tear propagation resistance (CQP 045-1 / ISO 34)	14 N/mm
Tensile lap-shear strength (CQP 046-1 / ISO 4587)	1.8 MPa
Service temperature (CQP 513-1)	-50 - 80°C
Shelf life (storage below 25°C) (CQP 016-1)	12 months

¹⁾ CQP= Corporate Quality Procedures

²⁾ 23°C / 50% r.h.

Product Description

Sikaflex®-591 is based on Sika's Silane Terminated Polymer (STP) technology. With it's excellent resistance against the harsh maritime weathering conditions it can be used for a wide range of applications. Sikaflex®-591 exceeds common environmental and safety standards and sets a new benchmark from an ecological point of view.

Sikaflex®-591 meets the low spread flame requirements (FTP Code Part 5) set out by the International Maritime Organization (IMO).

Product Benefits

- IMO approved
- Exceeds EH&S standards
- Free of isocyanate, solvents, PVC, phthalates and tin catalysts
- Highly elastic
- Excellent weathering stability
- Very good processing and tooling characteristics
- Bonds well to a wide variety of marine substrates

Areas of Application

Sikaflex®-591 is a multipurpose sealant designed for marine applications. It is suitable for elastic, vibration-resistant joint seals and for a wide variety of interior and exterior sealing applications. Sikaflex®-591 bonds well to substrates commonly used in the marine industry.

Sikaflex®-591 is not suitable for applications with teak wood and plastics that are prone to stress cracking (e.g. PMMA, PC, etc.). This product is suitable for professional experienced users only. Test with actual substrates and conditions have to be performed to ensure adhesion and material compatibility.



Cure Mechanism

Sikaflex®-591 cures by reaction with atmospheric moisture. At low temperatures the water content of the air is generally lower and the curing reaction proceeds some what slower (see diagram 1).

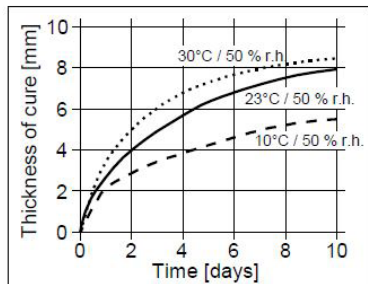


Diagram 1: Curing speed Sikaflex®-591

Chemical Resistance

Sikaflex®-591 is resistant to fresh water, seawater, and proprietary aqueous cleaning agents; temporarily resistant to fuels, mineral oils; not resistant to organic acids, concentrated mineral acids and caustic solutions and 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 an appropriate Sika® activating agent and Sika® Primer if required. Additional surface treatment depends on the specific nature of the substrates. Therefore all recommendations must be determined by preliminary tests. Advice on specific applications is available from the Technical Department of Sika Industry.

Application

For satisfactory results the adhesive must be applied with adequate equipment such as a piston application gun. Sikaflex®-591 can be processed between 5 °C and 40 °C but changes in reactivity as well as application properties need to be considered. The optimum process temperature (substrates, climate and product) is between 15 °C and 25 °C.

In case Sikaflex®-591 could get in contact with polyurethane ensure that those products are cured or wait at least 24 hours prior to seal.

Tooling and finishing

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

Other finishing agents must be tested for suitability / compatibility.

Removal

Uncured Sikaflex®-591 may be removed from tools and equipment with Sika® Remover-208. 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 on skin!

Overpaintability

Sikaflex®-591 can be overpainted with most conventional marine paint systems. The paint must be tested for compatibility by carrying out preliminary trials. Best results are obtained if the sealant is fully cured prior the paint process. Consider that the elasticity of paints is lower than of the sealant and this could lead to cracking of the paint film in the joint area.

PVC based paints and paints that dry by oxidation (oil or alkyd resin based) are generally not suitable to overpaint Sikaflex®-591.

Further Information

Copies of the following publications are available on request:

- Safety Data Sheets
- General Guidelines Bonding and Sealing with Sikaflex®

Packaging Information

Unipack	600 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 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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Sikaflex® -591 2/2

