

Sikaflex[®]-291

Multifunctional adhesive sealant for marine applications

Technical Product Data

Chemical base	1-C polyurethane	
Colour (CQP ¹⁾ 001-1)	White, grey, black	
Density (uncured) (CQP 006-4)	1.3 kg/L approx. depending on colour	
Non-sag properties	Good	
Cure mechanism	Humidity-curing	
Tack free time ²⁾ (CQP 019-1)	60 min. approx.	
Curing speed (CQP 049-1)	See diagram	
Open time ²⁾ (CQP 526-1)	45 min. approx.	
Shrinkage (CQP 014-1)	5% approx.	
Shore A-hardness (CQP 023-1 / ISO 868)	40 approx.	
Elongation at break (CQP 036-1 / ISO 37)	500% approx.	
Tensile strength (CQP 036-1 / ISO 37)	1.8 N/mm ² 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%	
Application temperature	5°C - 40°C	
Service temperature (CQP 513-1)	permanent	-40°C to 90°C
Short term	4 hours	160°C
	1 hour	180°C
Shelf life (storage below 25°C) (CQP 016-1)	12 months	

¹⁾ CQP = Corporate Sika Quality Procedures²⁾ At 23°C and 50% relative humidity

Description

Sikaflex[®]-291 is a non-sag 1-C polyurethane sealant specifically developed for the marine market, that 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.

Product Benefits

- 1-C formulation
- Elastic
- Low odour
- Resistant to ageing and weathering
- Non-corrosive
- Can be overpainted
- 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 & maintenance. 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.

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.

Industry



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 slower (see diagram).

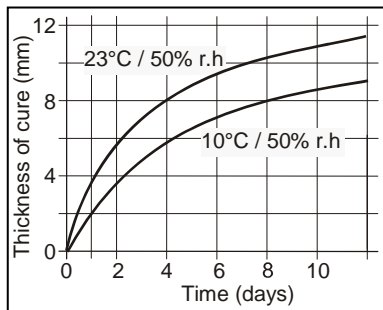


Diagram 1: Curing speed for Sikaflex®-291

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-205 (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 mem-brane.

Sausages: Place sausage 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.

Clean up

Uncured Sikaflex®-291 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® Hand Cleaner or a suitable industrial hand cleanser and water. Do not use solvents!

Overpainting

Sikaflex®-291 can be overpainted when tack-free. The paint must be tested for compatibility by carrying out preliminary trials. Sikaflex®-291 should not be exposed to baking temperatures until it has attained full cure. It should be understood that the hardness and film thickness of the paint may impair the elasticity of the sealant and lead to cracking of the paint film.

Further Information

Copies of the following publications are available on request:

- Material Safety Data Sheets
- Sika Primer Chart for Marine
- Sika Marine Application Guide

Packaging Information

Squeeze tube	88 mL
Cartridge (Black, white)	310 mL
Cartridge (Grey)	300 mL
Sausage	400 + 600 mL
Pail	23 L
Drum	195 L

Value Basis

All technical data stated in this Product Data Sheet and laboratory test based. Current measured values may vary due to factors beyond our control.

Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the current Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

All Product Data Sheets and Material Safety Data Sheets are also available on our web site.

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, within their shelf life. 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 recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet.

Further information available at:
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