

PRODUCT DATA SHEET

Sikaflex®-403 Tank & Silo

Polyurethane based elastic tank and silo sealant

PRODUCT DESCRIPTION

Sikaflex®-403 Tank & Silo is a 1-part, moisture curing, elastic sealant. It is designed for sealing steel containers built in sections such as enamelled steel or stainless steel tanks. The Product is resistant to liquid manure, silage liquids and is suitable for sealing domestic and municipal sewage systems.

USES

The Product is used for:

- Sealing segmented or bolted steel tanks including wall to floor connection joints.
- Tanks for the anaerobic digestion process including Biogas tanks.
- Liquid manure tanks.
- Drive-in silos for agricultural use.
- Agricultural stables.
- Silage clamp retaining walls.
- Domestic and municipal sewage treatment plants including waste water.
- Floor joints where very high chemical resistance is required.

PRODUCT INFORMATION

Chemical Base	Polyurethane	
Packaging	600 ml cylindrical foil pack	20 foil packs per box
Shelf Life	12 months from date of production	
Storage Conditions	The Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +25 °C. Always refer to packaging.	
Colour	Black, Concrete Grey	
Density	1.20 kg/l	(ISO 1183-1)

TECHNICAL INFORMATION

CHARACTERISTICS / ADVANTAGES

- Resistant to domestic and municipal sewage, liquid manure and silage liquid.
- Good mechanical resistance.
- Very good resistance to specific chemicals.
- Very good tear propagation resistance.
- High modulus of elasticity.
- Movement capability of $\pm 20\%$ (ISO 9047).

APPROVALS / STANDARDS

- CE marking and declaration of performance based on EN 15651-4:2012 Sealants for non-structural use in joints in buildings and pedestrian walkways — Part 4: Sealants for pedestrian walkways.
- Foodstuff and migration behaviour EN 1186, EN 13130, CEN/TS 14234, ISEGA, No. 56997 U 22.
- General building regulations, DIBt, No. Z-74.62-212.

Shore A Hardness	40 (after 28 days)	(EN ISO 868)								
Secant Tensile Modulus	0.90 N/mm ² at 60 % elongation (+23 °C)	(ISO 8339)								
Elongation at Break	700 %	(ISO 37)								
Movement Capability	± 20 %	(EN ISO 9047)								
Elastic Recovery	80 %	(EN ISO 7389)								
Tear Propagation Resistance	10.0 N/mm	(ISO 34-2)								
Service Temperature	<p>IMPORTANT</p> <p>Defining continuous maximum service temperature</p> <p>In any process system service temperatures affect the aggressiveness of the chemical mixture. Exceeding the stated performance limits could cause depolymerisation of the sealant.</p> <p>1. During specification analyse the content of the chemicals to establish their behavior at temperature.</p> <p>Service temperature range in a dry condition.</p> <table border="1"> <tr> <td>Maximum</td> <td>+75 °C</td> </tr> <tr> <td>Minimum</td> <td>-40 °C</td> </tr> </table> <p>Maximum service temperature in a wet condition.</p> <table border="1"> <tr> <td>Movement joints</td> <td>≤ +45 °C</td> </tr> <tr> <td>Overlap sealing</td> <td>≤ +65 °C</td> </tr> </table>		Maximum	+75 °C	Minimum	-40 °C	Movement joints	≤ +45 °C	Overlap sealing	≤ +65 °C
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Chemical Resistance	<p>IMPORTANT</p> <p>Chemical attack</p> <p>Chemical resistance is only effective after the Product is fully cured and is dependent on the chemicals, their concentration and their temperature. Exceeding the stated performance limits could cause depolymerisation of the sealant.</p> <p>1. Analyse the content, exposure time and temperature of the chemicals 2. Design the joints for the intended conditions</p> <p>Sikaflex®-403 Tank & Silo is resistant to:</p> <ul style="list-style-type: none"> ▪ Water ▪ Sea water ▪ Liquid manure ▪ Silage liquid ▪ Dilute alkalis ▪ Neutral water based dispersed detergents or cleaners ▪ Domestic and municipal sewage <p>Sikaflex®-403 Tank & Silo is not resistant to:</p> <ul style="list-style-type: none"> ▪ Concentrated organic and inorganic acids ▪ Organic solvents ▪ Chlorinated or aromatic hydrocarbons 	
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Joint Design	<p>Refer to all relevant local construction guidelines and regulations. The sealant must be specified and included in the design of the containment system.</p> <p>Reference must be made to the following document: Design guideline: Dimensioning of construction joints.</p>	
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APPLICATION INFORMATION

Sag Flow	0 mm (20 mm profile, +50 °C)	(EN ISO 7390)
Product Temperature	Maximum	+40 °C
	Minimum	+5 °C
Ambient Air Temperature	Maximum	+40 °C
	Minimum	+5 °C

Substrate Temperature	Maximum	+40 °C
	Minimum	+5 °C
The substrate temperature must be +3 °C above dew point temperature and free from frost and ice.		
Backing Material	Use closed cell, polyethylene foam backing rod	
Curing Rate	3 mm/24 hours (+23 °C / 50 % r.h.)	
Skin Time	5 hours (+23 °C / 50 % r.h.)	

VALUE BASE

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.

FURTHER DOCUMENTS

Refer to the following document:

- Pretreatment Chart Constructive Sealants and Adhesives.

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

Primers are adhesion promoters and not an alternative to improve poor preparation or cleaning of the joint surface.

Note: Primers also improve the long term adhesion performance of the sealed joint.

The substrate must be sound, clean, dry and free of all contaminants such as dirt, oil, grease, cement laitance, old sealants and poorly bonded coatings which could affect adhesion of the sealant.

The substrate must be of sufficient strength to cope with the stresses induced by the sealant during movement.

1. Use techniques such as wire brushing, grinding, grit blasting or other suitable mechanical tools to remove all weak substrate material.
2. Repair all damaged joint edges with suitable Sika repair products.
3. Completely remove all dust, loose and friable material from all surfaces before application of any activators, primers or sealant.
4. Where joints in the substrate are saw-cut, flush away all slurry material and allow joint surfaces to dry.

For optimum adhesion, joint durability and critical, high performance applications such as joints on multi-storey buildings, highly stressed joints or extreme weather exposure, use the following priming and pre-treatment procedures:

NON-POROUS SUBSTRATES

Enameled steel, aluminum, anodised aluminum, stainless steel, galvanised steel, epoxy and fusion bonded epoxy, powder coated metals, or glazed tiles:

1. Clean and pre-treat using Sika® Aktivator-205 applied with a clean cloth or Sika® Primer-3 N applied with a brush.
2. Consult the tank manufacturer for specific preparation and priming advice.

Other metals, such as copper, brass and titanium-zinc:

1. Clean and pre-treat using Sika® Aktivator-205 with a clean cloth.
2. Wait until the flash off time has been achieved.
3. Apply Sika® Primer-115 or Sika® Primer-3 N by brush.

PVC substrates:

1. Clean and pre-treat using Sika® Primer-215 applied with a brush.

POROUS SUBSTRATES

Concrete, aerated concrete and cement based renders, mortars and bricks:

1. Prime surface using Sika® Primer-115 or Sika® Primer-3 N applied by brush.

For more details of the primer or pre-treatment products refer to the individual Product Data Sheet.

Contact Sika Technical Services for additional information.

APPLICATION

IMPORTANT

Strictly follow installation procedures

Strictly follow installation procedures as defined in Method Statements, application manuals and working instructions which must always be adjusted to the actual site conditions.

IMPORTANT

Allowing insufficient curing time

Putting the Product into service too early can result in a reduction of the long-term stability of sealed sections.

1. Allow the Product to fully cure before it is exposed to mechanical or chemical stress.

IMPORTANT

Corrosion

Corrosion protection is dependent on the thickness of the sealant layer. For butt or lap joints the Product provides effective protection at an application thickness of ≥ 8 mm.

IMPORTANT

Resistance to chlorine

The Product is resistant to chlorine for tank disinfection and dosing purposes only.

1. Contact the tank supplier for guidelines and detailed conditions on dosing and disinfection.

IMPORTANT

Use on Bituminous, natural rubber or EPDM rubber substrates

These substrates can leach oils, plasticisers or solvents that can degrade the sealant causing the Product to become tacky.

1. Do not use the Product on any building materials which leach oils, plasticisers or solvents

IMPORTANT

Absorbency of natural stone substrates

Staining from plasticiser migration may occur when used on cast, reconstituted or natural stone such as granite, marble or limestone substrates.

1. Do not use on natural stone substrates

IMPORTANT

Swimming pools

Do not use to seal joints in and around swimming pools.

IMPORTANT

Alcohol affecting the curing mechanism

Exposure to alcohol during curing may interfere with the curing reaction and cause the Product to be tacky.

- a) Do not expose the Product to alcohol containing products during the curing period
1. Apply masking tape where neat or exact joint lines are required.
 2. After the required substrate preparation, insert a backing rod to the required depth.
 3. Prime the joint surfaces as recommended in substrate preparation.
 - Note: Avoid excessive application of primer to avoid causing puddles at the base of the joint.
 4. Prepare the end of the foil pack or cartridge, insert into the sealant gun and fit the nozzle.
 - Note: The Product is supplied ready to use.
 5. Extrude the Product into the joint ensuring that it comes into full contact with the sides of the joint and avoiding any air entrapment.
 6. **IMPORTANT** Do not use tooling products containing solvents. As soon as possible after application, tool the sealant firmly against the joint sides to ensure adequate adhesion and a smooth finish. Use a compatible tooling agent such as Sika® Tooling Agent N to smooth the joint surface.

7. Remove the tape within the skinning time of the Product after finishing.

For lap joints such as in enameled steel containers consult the tank manufacturer for specific application advice.

OVER-PAINTING THE SEALANT

IMPORTANT

Tacky paint over the sealant

Some paint systems may exhibit plasticiser migration that will cause the painted surface to be tacky.

1. Consult the paint manufacturer for specific advice on over-painting sealants.
2. Trial the paint system with the Product prior to undertaking the project.

IMPORTANT

Cracking paint over the sealant

Rigid paint systems reduce the elasticity of the Product and may crack when used on joints subject to movement.

- a) Do not use rigid paint systems to over-paint joints subject to movement.

The Product can be over-painted with most conventional paint coating systems. Prior to application test the paint system for compatibility.

1. Allow the Product to fully cure before over-painting.
2. Carry out preliminary trials to test the paint for compatibility in accordance with ISO/TR 20436:2017 - Buildings and civil engineering works — Sealants — Paintability and paint compatibility of sealants

Colour variation

Note: Colour variations may occur due to the exposure in service to chemicals, high temperatures or UV-radiation, especially with white colour shade. This effect is aesthetic and does not adversely influence the technical performance or durability of the product.

CLEANING OF TOOLS

Clean all tools and application equipment immediately after use with Sika® Thinner C. Once cured, hardened material can only be removed mechanically. For cleaning skin use Sika® Cleaning Wipes-100.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

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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