

Sikaflex® TS Plus

One-Component, Polyurethane Sealant

Description Sikaflex® TS Plus is a one-component polyurethane-based sealant resistant to liquid manure and suitable for sealing domestic sewage systems. Sikaflex®-TS Plus is also designed for sealing steel containers built in sections such as enamelled steel or stainless steel tanks. Sikaflex® TS Plus reacts with humidity to form a flexible sealant.

Where to Use

- For sealing metal and concrete storage containers for water and many other liquids including liquid manure.
- For sealing between overlapping steel segments and the bottom joints of steel containers.
- Suitable for vertical and horizontal joints; readily placeable at 4°C (39°F).

Advantages

- Capable of ± 15% joint movement.
- Resistant to domestic sewage, liquid manure and numerous chemicals.
- High tear strength.
- High modulus elastic sealant.

Technical Data				
Packaging	600 mL (20 US fl. oz) sausage, 20/case			
Colour	Black			
Yield		Linear Metre per Litre	Linear Feet per Cartridge	
	Width	Depth		
	mm (in)	6 (¼)	13 (½)	6 (¼) 13 (½)
	6 (¼)	24.8		24.4
	13 (½)	12.4	6.2	12.2 6.1
	19 (¾)	8.3	4.1	8.2 4.0
Shelf Life	9 months in original, unopened packaging. Store between 4 and 35°C (39 and 95°F). Condition product between 18 and 24°C (65 and 75°F) before using.			
Application Temperature	4 to 38°C (39 to 100°F). Sealant should be installed when joint is at mid-range of its anticipated movement.			
Service Range				
Dry	-40 to 77° C (-40 to 170°F)			
Wet	40°C (104°F) max. dependent on the chemical composition of the stored liquid. Where silage silos without insulation are exposed to high external temperatures, the internal silage process temperatures may exceed the maximum allowable limits. This can also then cause depolymerisation and deterioration of the sealant in the top section of the silo, where the temperatures and chemical stress may be higher.			
Properties at 23°C (73°F) and 50% R.H.				
Curing Rate ASTM C679	Tack-free time	Approx. 20 hrs		
	Tack-free to touch	3 hrs		
	Final cure	4 to 7 days		
Shore A Hardness ASTM D2240	21 days	45		
Tensile Properties ASTM D412	21 days	Tensile stress	1.86 MPa (269 psi)	
		Elongation at break	280 %	
		Modulus of elasticity	4.08 MPa (592 psi)	
Chemical Resistance	Resistant to: Water, seawater, liquid manure, dilute alkalis, neutral water, dispersed detergents and domestic sewage. <i>For resistance to diluted acids please consult a Technical Service Department.</i>			
	Not resistant to: Alcohol, organic acids, concentrated alkalis, concentrated acids, chlorinated and aromatic hydrocarbons.			
	Note: The behaviour of chemical mixtures can be complex and resistance must always be confirmed for each component of the complete tank system to determine its suitability including the sealant.			

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.



How to Use

Surface Preparation

All joint surfaces must be clean, sound, dry and frost-free. Joint walls must be free of oils, tar, asphalt, bitumen, grease, paints, coatings, sealers, curing compound residues, and any other foreign matter that might prevent adhesion. Ideally this should be accomplished by mechanical means. Bond breaker tape or backer rod must be used in bottom of joint to prevent bond.

Priming

Non-porous substrates:

Metals, powder coatings etc. have to be cleaned with a fine abrasive pad and Sika® Cleaner-205 by using a clean towel/cloth. After a flash-off time of at least 15 minutes, apply Sika® Primer-205 by using a brush. Before bonding, allow a flash-off time of at least 15 minutes. (maximum 8 hours). For PVC, use Sika® Primer-203. Before bonding allow a flash-off time of at least 15 minutes. (maximum 8 hours.).

Porous substrates:

Concrete, aerated concrete and cementitious renders, mortars, brick, etc. have to be primed with Sika® Primer-202 by using a brush. Before bonding, allow a flash off time of at least 15 minutes (maximum 8 hours.).

Important note: Primers are only adhesion promoters. They neither substitute for the correct cleaning of the surface nor improve their strength significantly. Primers improve long term performance. For further information refer to the Sika® Primer table.

Application

Recommended application temperatures are between 4 and 38°C (39 and 100°F). For cold-weather application, store units at approximately 21°C (70°F) and remove just prior to using. Make sure joint is frost-free. Install with hand or power operated caulking gun. For best performance, Sikaflex® TS Plus should be gunned into joint when joint slot is at mid-point of its designed expansion and contraction. Cut plastic tip on cartridge to desired joint size. Puncture airtight seal at base of tip. Place nozzle of gun into bottom of joint and fill entire joint. Keeping the nozzle deep in the sealant, continue with a steady flow of sealant preceding nozzle to avoid air entrapment. Also, avoid overlapping of sealant since this also entraps air. Tool as required. Proper joint design for moving joints is 2:1 width to depth ratio, with a recommended 6 mm (1/4 in) minimum and 13 mm (1/2 in) maximum depth of sealant. For non-moving joints, the width to depth ratio can vary.

Clean Up

Uncured material can be removed from equipment and tools using Sika® Equipment Cleaner. Cured material can only be removed manually or mechanically. For removal of uncured material from hands and sensitive surfaces, use Sika® Hand Cleaner towels.

Limitations

- Allow 1 week cure under standard conditions when using Sikaflex® TS Plus in total water immersion situations and prior to painting.
- When overcoating with water, oil and rubber based paints, compatibility and adhesion testing is essential.
- Maximum depth of sealant must not exceed 13 mm (1/2 in); minimum depth is 6 mm (1/4 in).
- Maximum expansion and contraction should not exceed 35% of average joint width.
- Avoid contact with materials or surfaces impregnated with, or containing, oil, asphalt, tar or bituminous substances.
- Do not apply or cure in the presence of uncured silicone sealants, alcohol and other solvent cleaners.
- Do not apply when moisture vapour transmission condition exists from the substrate as this can cause bubbling within the sealant.
- Some minimal surface skinning of product may be present in bulk packaging (pails, drums) within its shelf life. Cut and discard cured material to expose the uncured product that still may be used.
- Use opened cartridges and uni-pac sausages the same day.
- When applying sealant, avoid air-entrapment.
- Since material is moisture-cured, permit sufficient exposure to air.
- The ultimate performance of Sikaflex® TS Plus depends on good joint design and proper application with joint surfaces properly prepared.
- Certain substrates require the use of a primer. Please consult the Sikaflex® Primers Product Data Sheet or Sika Canada's Technical Services.
- Although applying sealants over paints, sealers or coatings is not recommended within the industry, where it cannot be avoided, it is always necessary to test for adhesion. It should also be recognized that the existing paint, sealer or coating will dictate bond values and possibly the integrity of a subsequently applied sealant and thus the performance of the joint.
- The depth of sealant in horizontal joints subject to traffic is 13 mm (1/2 in).
- Do not tool with detergent or soap solutions.

Health and Safety Information

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

KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY

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 under www.sika.ca.

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