

Sikasil[®] WS-621

Silicone Sealant for Glazing Applications and Construction of Aquariums

Description	Sikasil WS-621 is an acidic, 1 part, moisture curing, elastic joint sealant based on silicone.
Uses	Sikasil WS-621 is a high-performance sealant designed for sealing, bonding and mending tasks. It is particularly suitable for high-quality glass structures (Total Vision Glazing, TVG) and the construction of aquariums.
Advantages	<ul style="list-style-type: none"> ▪ Acetoxy curing system ▪ Ready to use ▪ Solventless ▪ Non-sag ▪ Ready gunnability at low (+5°C) and high (+40°C) temperatures ▪ Rapid curing: quickly becomes tackfree ▪ Low shrinkage on curing ▪ After cure: elastic at low (-40°C) and high (+180°C) temperatures ▪ Suitable for high mechanical loads ▪ Approved for construction of aquariums ▪ Outstanding adhesion to glass, glazed surfaces, ceramic tiles, many plastics and most paints ▪ Outstanding UV – and weathering resistance ▪ Abrasion resistant ▪ Long shelf-life: simplified stock-keeping
Approvals/Standards	<p>ISO 11600: Classification of sealants for Building Construction: G – 20 LM.</p> <p>TÜV Rheinland (Rhineland Technical Inspection Authority): Approved as sealing compound for the construction of aquariums (R 931088 dated June 10, 1996).</p> <p>ASTM C920: Elastic joint sealants: Type S, Grade NS, Class 25, Use NT, G, A and M.</p> <p>TT-S-001543 A: Sealing compound: silicone rubber base (for caulking, sealing and glazing in buildings and other structures): Class A – compounds resistant to 50% maximum total joint movement.</p> <p>TT-S-00230 C: Sealing compound: elastomeric type, single component (for caulking, sealing and glazing in buildings and other structures), type II, class A.</p> <p>BS 5889, 1989: “One-part gun grade silicone-based sealants.” Type B sealing compound for universal use in construction joints.</p> <p>UNI 9610, 9611: Silicone sealant for joints – requirements and tests, packaging.</p>

Product Data**Form**

Colour	Transparent
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Packaging	600 ml sausages, 20 sausages per box 310 ml cartridges, 25 cartridges per box Other packaging, e.g. for industrial applications, can be supplied on request.
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Storage

Storage Conditions/Shelf Life	18 months from date of production if stored in undamaged original sealed containers, in dry conditions at temperatures between +5°C and +25°C.
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Technical Data

Chemical Base	1-part silicone, moisture curing
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Skinning Time	~ 10 minutes (+23°C / 50% r.h.)
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Tack-free Time	~ 60 minutes
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Curing Rate	~ 1.5 mm / 24 h (+23°C / 50% r.h.)
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Movement Capability	± 20% (ISO 11600)
	50% (ASTM C920)

Joint Dimensions	6 mm min. width / 35 mm max. width
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Sag Flow	Non-sag (ISO 7390, Profile U20)
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Service Temperature	-40°C to +180°C (after vulcanisation)
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Mechanical Properties

Tear Strength	~ 4.7 N/mm after 4 weeks (+23°C / 50% r.h.) (ISO 34-C)
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Shore A Hardness	~ 22 after 4 weeks (+23°C / 50% r.h.) (ISO 868)
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E-Modulus	~ 0.60 N/mm ² at 100% elongation after 4 weeks (+23°C / 50% r.h.) (ISO 37, rod S2)
	~ 0.55 N/mm ² at 100% elongation after 4 weeks (+23°C / 50% r.h.) (ISO 8339-A)

Tensile Strength	~ 1.60 N/mm ² after 4 weeks (+23°C / 50% r.h.) (ISO 37, rod S2)
	~ 0.80 N/mm ² after 4 weeks (+23°C / 50% r.h.) (ISO 8339-A)

Elongation at Break	~ 450% after 4 weeks (+23°C / 50% r.h.) (ISO 37, rod S2)
	~ 250% after 4 weeks (+23°C / 50% r.h.) (ISO 8339-A)

System Information**Application Details**

Consumption	The joint width must be designed to accommodate the movement capability of the sealant. The joint width must be > 6 mm and < 35mm. The width to depth ratio of ~ 2 : 1 must be respected.
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Consumption (continued)

Joints must be properly dimensioned as changes are no longer possible after construction. Basis for calculation of the necessary joint width are the technical characteristic values of the joint sealant and the adjacent building materials, the exposure of the building elements, their construction and size.

Joint width	8 mm	10 mm	15 mm	20 mm	25 mm	30 mm
Joint depth	6 mm	8 mm	8 mm	10 mm	12 mm	15 mm
Joint length/600ml	~ 12.5m	~7.5m	~4.5m	~2.5m	~1.6m	~1.3m

The stated values are indications only.

Backfilling: Use only closed cell, sealant compatible foam backer rods eg. High resilience polyethylene foam rod. If joints eg. Triangle joints are too shallow for backing material to be employed, we recommend using a polyethylene tape. This acts as a release film (bond breaker), allowing the joint to move and the silicone to stretch freely.

Substrate Preparation/Priming**Cleaning**

Substrates must be clean and dry, homogeneous, free from grease, dust and loose particles. Contaminated surfaces may be cleaned mechanically, if porous, or with a solvent if non porous. Glass may be cleaned with water containing a surfactant or with a solvent. Metals may also be cleaned with a solvent. In the latter case, apply the solvent with a clean, oilfree, lintfree cloth. Remove residual solvent with a fresh, clean dry cloth before it evaporates.

Priming

Sikasil Primers are primers, not cleaning agents. Therefore clean the surface as described for "Cleaning" by the two cloths method.

Subsequently:

- Pour a small amount of primer onto a clean, lint-free, dry cloth and apply it in one operation. Never dip the cloths into the primer!
- Only apply Sikasil Primers (esp. Sikasil Primer- 790) in a thin layer, since otherwise the surface will be cracked and brittle and Sikasil silicone adhesives may no longer bond properly.
- Once the primer has been applied, it is essential that no more solvent gets onto the surface and that there is no further contamination.
- Allow to dry for the time given below and then apply Sikasil silicone adhesive with the flash-off mentioned.
 - Sikasil Primer -790:
 - For metals eg. Aluminium, stainless steel, galvanised steel
 - For powder coatings, eg. Polyester, EP and PU coatings, PVDF coatings
 - Flash off time: min. 20 minutes, max. 2 hours
 - Sikasil Primer -783:
 - For porous substrates e.g. concrete, aerated concrete and cement plaster
 - Flash off time: min. 30 minutes, max. 8 hours

Application/Conditions/Limits

Substrate Temperature	+5°C min. / +40°C max.
Air Temperature	+5°C min / +40°C max.
Substrate Humidity	Dry

Application Instructions**Application Method/Tools**

Sikasil WS-621 is ready to use.

After suitable joint preparation and properly prepared substrate, the sealant is gunned into place and tooled with a spatula or suitable smoothing liquid. When tooling Sikasil WS-621 press the sealant to the joint flanks.

Cleaning of Tools

Clean all tools and application equipment with sealant remover Sika Remover 208 immediately after use. Hardened/cured material can only be mechanically removed.

Notes on Application/Limits	<p>Elastic sealants must not be over painted! Sealant compatible coatings may cover the joint sides to max. 1mm.</p> <p>The compatibility must be tested individually according to ASTM C1087.</p> <p>Sikasil WS-621 is compatible with many cured silicone sealants. Where two or more different sealants are used, allow the first to cure completely before applying the next.</p> <p>Sikasil WS-621 may not be used for structural glazing. Use Sikasil-SG-20 and Sikasil SG-500 for this.</p> <p>Do not use Sikasil WS-621 on pre-stressed polyacrylate and polycarbonate elements as it may cause environmental stress cracking (crazing).</p> <p>Sikasil WS-621 may not be used on natural stone, such as marble, granite and quartzite, as it may cause staining. Sikasil WS-355 is preferred here.</p> <p>Light coloured Sikasil WS-621 must not be used on such substrates as neoprene or EPDM; as these may cause it to turn yellow.</p> <p>Technical service: Please contact your supplier for more details of available laboratory facilities, applications support and other technical services as well as comprehensive technical information and literature.</p>
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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.
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Health & Safety Information

Protective Measures	<p>Do not allow uncured sealant to come into contact with the eyes or mouth as it may cause irritation. If such contact occurs, flush eyes or rinse mouth immediately with water and, if necessary, consult a doctor. Avoid prolonged contact of uncured sealant with the skin – use a dry cloth or paper to remove it. Change soiled work clothes and wash hands before breaks and after finishing work.</p> <p>Since Sikasil WS-621 releases acetic acid on curing, ensure good ventilation indoors.</p> <p>Local regulations as well as health and safety advice on packaging labels must be observed.</p> <p>Detailed health and safety information as well as detailed precautionary measures e.g. physical, toxicological and ecological data can be obtained from the Material Safety Data Sheet.</p>
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Important Notes	<p>All technical data stated in the Technical Data Sheet are based on laboratory test.</p> <p>Actual data may vary due to changing conditions beyond our control.</p> <p>Residues of material must be removed according to local regulations. Fully cured material can be disposed of as household waste under agreement with the responsible local authorities.</p>
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Important Notification	<p>The information, and, in particular, the recommendations relating to the application and end-use of Sika's 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 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 proprietary rights of third parties must be observed. All orders are accepted subject of our terms and conditions of sale. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request.</p> <p>PLEASE CONSULT OUR TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.</p>
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