

SikaFast[®]-5221

Fast curing 2-C structural adhesive (Open time: 9 min.)

Technical Product Data

Properties	Component A SikaFast [®] -5221	Component B SikaFast [®] -5200
Chemical base	2-component ADP Acrylic	
Colour (CSQP ¹⁾ 001-1)	White	Black
Colour mixed	Grey	
Cure mechanism	Polymerisation	
Density (uncured) (CSQP 006-4)	1,14 g/cm ³ approx.	1,46 g/cm ³ approx.
Mixing Ratio	by volume by weight	10 : 1 10 : 1,28
Consistency	Thixotropic paste	
Application temperature	10° - 40°C (50° - 105°F)	
Open time ²⁾ (CSQP 526-1), (static mixer)	9 min. approx.	
Curing speed ²⁾ (CSQP 546-1/ISO 4587)	(see diagram 1)	
Shore hardness A (CSQP 023-1 / ISO 868)	90 approx.	
Shore hardness D	50 approx.	
Tensile strength ²⁾ (CSQP 036-1 / ISO 527)	10 N/mm ² approx.	
Elongation at break ²⁾ (CSQP 036-1 / ISO 527)	150% approx.	
Tensile-shear strength ²⁾ (CSQP 546-1 / ISO 4587)	8 N/mm ² approx.	
Glass transition temperature (CSQP 509-1 / ISO 4663)	52°C approx.	
Electrical resistance (CSQP 079-2 / ASTM D 257-99)	1,6 x 10 ¹³ Ω cm approx.	
Service temperature (CSQP 513-1)	permanent	-40° to + 80°C
Shelf life and storage ³⁾ (CSQP 016-1)	cartridge	12 months
	pail	12 months

¹⁾ CSQP = Corporate Sika Quality Procedures²⁾ 23°C (73°F) / 50% r.h.³⁾ Stored at temperature below 25°C (77°F) and not exposed to direct sun light

Description

SikaFast[®]-5221 is a fast curing, flexible 2-component adhesive system. It is based on ADP, Sika's polymer technology, derived from the acrylic chemistry.

Uncured SikaFast[®]-5221 is a pasty, non-sagging, non-flammable material which allows an easy and precise application.

SikaFast[®]-5221 is manufactured in accordance with ISO 9001 / 14001 quality assurance system and with the responsible care program.

Product Benefits

- Strength development within minutes after application
- Adhesion to a wide range of metals and plastics with no or only limited substrate preparation
- High strength
- Gap filling, allowing for manufacturing tolerances (up to 3 mm)
- Flexible
- Vibration damping
- Solvent and acid free
- Easy mixing
- Low odour
- Approved NSF R2 (incidental food contact)

Areas of Application

The ADP technology offers a new generation of fast curing, flexible adhesives designed to substitute welding, riveting, clinching and other mechanical fastening techniques. SikaFast[®]-5221 is suitable for high strength fastening of concealed joints on different types of substrates including top coats, plastics, etc.



Cure Mechanism

SikaFast®-5221 contains the reactive monomer and SikaFast®-5200 (component B) acts as initiator. On mixing with a static mixer, the polymerisation reaction is started. SikaFast®-5221 offers a relatively long open time followed by fast curing which results in an optimal relation between application time and strength development to reach handling strength, see diagram (the curing time is slightly varying depending on ambient temperature). In spite of the quick strength build-up, premature exposure to stresses destroys the adhesive. Allow the adhesive to cure for 25 minutes (from mixing), before any load can affect the bond. Adjustment of the bonded parts is possible only within the open time (9 minutes from mixing).

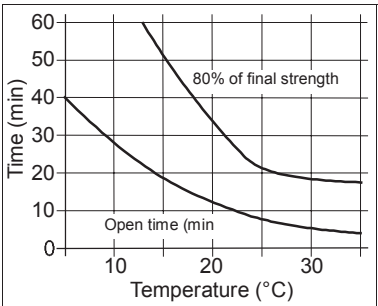


Diagram: Open time and curing speed for SikaFast®-5221

Chemical Resistance

For advice contact the Technical Service Department of Sika Industry.

Adhesion results

The following table summarises lap-shear test results obtained with different substrates. These results are indications. Due to the diversity of substrates, preliminary tests are recommended. Be aware that the mechanical properties are temperature depending (values on request).

Adhesion table

Material		Value
Aluminium Al Mg3	C	8 N/mm ²
Steel St 32	C	8 N/mm ²
Stainless steel	C	8 N/mm ²
Galvanised steel	A	6 N/mm ²
UP-FRP	S	6 N/mm ²
Acrylic paint	S	6 N/mm ²
ABS (Terulan)	A/C	6 N/mm ²
PVC (K�radur ES)	C	9 N/mm ²
Polycarbonate	S	8 N/mm ²

Table 1: Lap shear samples according to ISO 4587 bondline thickness 1,5mm

Break type: Adhesive, Cohesive, Substrate

Method of Application

Surface preparation

Surfaces must be clean, dry and free from all traces of grease, oil and dust. Remove all loose particles or residues. Contaminated areas must be thoroughly cleaned before bonding. In combination with SikaFast®-5221 Sika strongly recommends the use of Sika® ADPrep-5901, the general surface preparation agent for Sika® ADP adhesive system.

Advice on specific applications is available from the Technical Service Department of Sika Industry

Application

With a 2-C cartridge or pump at mixing ratio 10 : 1 through a static mixer. The open time can be slightly varied with adapted processing parameters (method on request). Consider that if applied in large masses, heat is generated by the exothermic reaction. To avoid excessive temperature the bond line thickness should not exceed 3 mm. For additional information and support in evaluation of the appropriate application equipment please contact our Sika System Engineering.

Removal

Excess material can best be removed before curing with a dry wipe. Uncured SikaFast®-5211 may be removed from tools and equipment with Sika® Remover-208 or a suitable solvent. Once cured the material can only be removed mechanically.

Hands and exposed skin should be washed immediately using Sika® Handclean Towel or a suitable industrial hand cleaner and water. Do not use solvents!

Further Information

Copies of the following publications are available on request:
- Material Safety Data Sheets
- SikaFast®-5000 Primer Chart

Packaging Information

Pail (comp. A)	20 l
Pail (comp. B)	18 l
Dual cartridge	250 ml

Important

For information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Material Safety Data Sheets containing physical, ecological, toxicological and other safety-related data.

Note

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 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 to our current terms of sale and delivery. 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.



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