

PRODUCT DATA SHEET

SikaPower®-1277

Toughened and high impact-resistant 2-component structural adhesive

TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

Properties	SikaPower®-1277 (A)	SikaPower®-1277 (B)
Chemical base	Epoxy	Amine
Colour (CQP001-1)	Red	White
	mixed	Light red
Density	1.08 g/cm ³	1.06 g/cm ³
	mixed (calculated)	1.07 g/cm ³
Mixing ratio	A:B by volume	2:1
	A:B by weight	2:1
Viscosity (CQP029-4)	at 10 s ⁻¹	430 Pa·s ^A
		100 Pa·s ^A
Consistency		Thixotropic paste
Application temperature		15 – 35 °C
Open time (CQP046-11 / ISO 4587)	as contact adhesive	1 hour ^{B, C, D}
Handling time (CQP046-11 / ISO 4587)		11 hours ^{C, D}
Curing time (CQP046-9 / ISO 4587)	time to reach 20 MPa	24 hours ^{C, D}
Shore D hardness (CQP023-1 / ISO 48-4)		75 ^{C, E}
Tensile strength (CQP543-1 / ISO 527)		30 MPa ^{C, E}
E-Modulus (CQP543-1 / ISO 527)		2 000 MPa ^{C, E}
Elongation at break (CQP543-1 / ISO 527)		4 % ^{C, E}
Tensile lap-shear strength (CQP046-9 / ISO 4587)		28 MPa ^{C, D, E}
Impact peel strength (CQP505-1 / ISO 11343)		30 N/mm ^{C, D, E, F}
Glass transition temperature (CQP509-1 / ISO 6721)		67 °C ^E
Shelf life (CQP016-1)	cartridges	24 months ^G
	pails	12 months ^G

CQP = Corporate Quality Procedure

^{C)} 23 °C / 50 % r. h.

^{F)} impact speed: 2 m/s

^{A)} tested at 20 °C

^{D)} adhesive layer: 25 x 10 x 0.3 mm / on steel

^{G)} storage between 10 and 30 °C

^{B)} applied on both bonding surfaces

^{E)} cured for 2 weeks at 23 °C

DESCRIPTION

SikaPower®-1277 is a structural 2-component epoxy adhesive, which cures at room temperature. It is designed for high strength and impact-resistant bonding of metallic substrates, like steel and aluminum, as well as of composite substrates, like GFRP and CFRP laminates. The adhesive has good non-sag properties and contains glass beads of 0.3 mm to ensure an optimal bonding thickness.

PRODUCT BENEFITS

- High structural and high impact-resistant properties
- Contains anti-corrosion agents
- Contains glass beads to ensure an optimal bonding thickness
- Does not contain solvents or PVC
- Cures at room temperature
- Accelerated curing and higher mechanical strength with heat

AREAS OF APPLICATION

SikaPower®-1277 is suitable for structural bonding applications in transportation and general industry. It can also be used for repair applications in combination with spot welding, riveting or clinching. The product is applied as contact adhesive (2-side application). In case of single bead application contact Sika. This product is suitable for professional experienced users only. Test with actual substrates and conditions have to be performed ensuring adhesion and material compatibility.

CURE MECHANISM

SikaPower®-1277 cures by chemical reaction of the two components at room temperature. The cure rate is accelerated and the final glass transition temperature, as well as the tensile and shear strengths, may be significantly increased at higher curing temperatures. The following table shows typical lap-shear strengths reached after different curing times and temperatures.

Temperature	Time	Strength
23 °C	24 hours	20 MPa
60 °C	60 minutes	10 MPa
80 °C	30 minutes	15 MPa

Table 1: Typical lap-shear strength development at different curing conditions (strength tested at 23 °C)

CHEMICAL RESISTANCE

In view of potential chemical or thermal exposure, it is required to conduct a project related testing.

METHOD OF APPLICATION

Surface Preparation

Surfaces must be clean, dry and free from grease, oil and dust. Surface treatment depends on the specific nature of the substrates and is crucial for a long lasting bond. All pre-treatment steps must be confirmed by preliminary tests on original substrates considering specific conditions in the assembly process.

Application

SikaPower®-1277 is dispensed from dual cartridges with adequate piston guns or from pails with 2-component equipment. If dispensed out of equipment, the mixer needs to be tailored for the specific application.

Cartridge use: Extrude adhesive without mixer to equalize the filling levels. Attach the mixer and dispose the first few cm of the bead prior to the application.

Apply the adhesive on both bonding surfaces and use a spatula to spread it. Join the parts within the open time of 1 hour. If the product is used with a single bead contact Sika prior to the application. The mixer open time is 30 minutes.

Removal

Uncured SikaPower®-1277 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 have to be washed immediately using hand wipes such as Sika® Cleaner-350 H or a suitable industrial hand cleaner and water. Do not use solvents on skin!

STORAGE CONDITIONS

SikaPower®-1277 has to be kept between 10 °C and 30 °C in a dry place. Do not expose to direct sunlight or frost. After opening of the packaging, the contents have to be protected against humidity.

FURTHER INFORMATION

The information herein is offered for general guidance only. Advice on specific applications is available on request from the Technical Department of Sika Industry. Copies of the following publications are available on request:

- Safety Data Sheets
- ATI: Mixer alternatives for cartridges

PACKAGING INFORMATION

SikaPower®-1277 (A+B)

Dual cartridge	400 ml
Mixer: Sulzer MixPac™ MFQ 08-24T	

SikaPower®-1277 (A)

Pail	19 kg
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SikaPower®-1277 (B)

Pail	19 kg
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BASIS OF PRODUCT DATA

All technical data stated in this document are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

HEALTH AND SAFETY INFORMATION

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.

DISCLAIMER

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.

PRODUCT DATA SHEET

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