



PRODUCT DATA SHEET

SikaPower®-477 R

High impact-resistant 2-component structural adhesive for automotive repair

TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

Properties	SikaPower®-477 R (A)	SikaPower®-477 R (B)
Chemical Base	Epoxy	Amine
Color (CQP001-1)	Red	White
	mixed	
	Light red	
Density (Uncured)	1.06 kg/l	1.06 kg/l
	mixed (calculated)	
	1.06 kg/l	
Mixing Ratio	by volume	2:1
	by weight	2:1
Solid Content	100 %	
Application Temperature	15 – 35 °C	
Open time (CQP046-11 / ISO 4587)	applied on both bonding surfaces	
	1 hour ^{A, B}	
Handling time (CQP046-11 / ISO 4587)	11 hours ^{A, B}	
Curing time (CQP046-9, ISO4587)	time to reach 20 MPa	
	24 hours ^{A, B}	
Tensile Strength (CQP543-1 / ISO 527)	30 MPa ^{A, D}	
E-Modulus (CQP543-1 / ISO 527)	2000 MPa ^{A, E}	
Elongation at Break (CQP543-1 / ISO 527)	4 % ^{A, D}	
Tensile Lap-Shear Strength (CQP046-9 / ISO 4587)	28 MPa ^{A, C, D}	
Impact peel strength (CQP505-1 / ISO 11343)	30 N/mm ^{A, B, D, E}	
Glass Transition Temperature (CQP509-1 / ISO 6721)	67 °C ^D	
Shelf Life	24 months	

CQP = Corporate Quality Procedure
 C) adhesive layer: 25 x 10 x 0.3 mm / on steel

A) tested at 23 °C
 D) cured for 2 weeks at 23 °C

B) applied on both bonding surfaces
 E) impact speed: 2 m/s

DESCRIPTION

SikaPower®-477 R 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 composite substrates, like carbon fibre reinforced plastics.

The adhesive contains glass beads of 0.3 mm to ensure defined bonding thickness.

PRODUCT BENEFITS

- High structural and impact-resistant properties
- Suitable to bond different metals
- Cures at room temperature
- Accelerated curing and higher mechanical strength when cured at elevated temperature (up to 85 °C)
- Contains anti-corrosion agents
- Contains glass beads to ensure defined bonding thickness
- Does not contain solvents or PVC
- Application with a standard caulking gun

AREAS OF APPLICATION

SikaPower®-477 R is suitable for structural bonding applications in the automotive repair market. It can also be used as a hybrid joint in combination with spot welding, riveting or clinching techniques. The product must be applied on both surfaces to be bonded.

This product is suitable for experienced professional users only. Tests with actual substrates and conditions have to be performed ensuring adhesion and material compatibility.

CURE MECHANISM

SikaPower®-477 R cures by chemical reaction of the two components at room temperature. The cure rate can be further accelerated at higher temperatures, e.g. using ovens or infrared lamps. The final glass transition temperature, as well as the tensile and shear strengths, may be increased with higher curing temperature.

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 treatments depends on the specific nature of the substrates and is crucial for a long-lasting bond.

All pretreatment steps must be confirmed by preliminary test on original substrates considering specific conditions in the assembly process.

Application

SikaPower®-477 R is dispensed from a universal cartridge with an adequate piston-driven dispenser. The use of electric or pneumatic dispensers with piston-driven plungers is recommended.

Extrude adhesive without mixer to equalize the filling levels. Attach the mixer and dispose of a few centimeters of the bead prior to the application.

Apply the adhesive on the surfaces of both parts to be bonded and use a spatula to spread it properly. Join the parts within the open time of 1 hour. The open time is strongly reduced if the product is used only on one side.

The mixer open time is 30 minutes.

Removal

Uncured SikaPower®-477 R may 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-350H or a suitable industrial hand cleaner and water.

Do not use solvents on skin.

STORAGE CONDITIONS

SikaPower®-477 R 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

PACKAGING INFORMATION

Universal cartridge	195 ml
Mixer: Nordson Static Mixer 280AN-220	

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

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

DISCLAIMER

The information, and, in particular, the recommendations relating to the application and enduse 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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Sika Kimia Sdn. Bhd.

Lot 689, Nilai Industrial Estate,
71800 Nilai, Negeri Sembilan D.K.
Malaysia
Phone: +606-7991762
e-mail: info@my.sika.com
Website: www.sika.com.my

