

PRODUCT DATA SHEET

SikaPower®-1576

TOUGHENED STRUCTURAL ADHESIVE FOR METALS AND COMPOSITES

TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

Properties	SikaPower®-1576 A	SikaPower®-1576 B
Chemical base	Epoxy	Amine
Color (CQP001-1)	Grey	Beige
	mixed	Grey
Density	1.4 g/cm ³	1.2 g/cm ³
	mixed, calculated	1.3 g/cm ³
Mixing ratio	A:B by volume	1:1
	A:B by weight	10:9
Viscosity (CQP029-4)	at 0.1 s ⁻¹	1200 Pa·s ^A
		880 Pa·s ^A
Consistency	mixed	Thixotropic paste
Application temperature	15 – 30 °C	
Pot-life (CQP021-1)	70 minutes ^A	
Handling time (CQP580-1, -6 / ISO 4587)	time to reach 1 MPa	10 hours ^{A, B}
Shore D hardness (CQP023-1 / ISO 7619-1)	80	
Tensile strength (CQP543-1 / ISO 527)	27 MPa ^{A, C}	
E-Modulus (CQP543-1 / ISO 527)	2 500 MPa ^{A, C}	
Elongation at break (CQP543-1 / ISO 527)	2.4 % ^{A, C}	
Tensile lap-shear strength (CQP046-9 / ISO 4587)	23 MPa ^{A, B, C}	
Glass transition temperature (CQP509-1 / ISO 6721)	60 °C ^C	
Shelf life	12 months ^D	

CQP = Corporate Quality Procedure

^{A)} 23 °C / 50 % r. h.^{B)} adhesive thickness: 1 mm / substrate: GFR-epoxy^{C)} cured for 1 day at 40 °C^{D)} storage between 15 and 25 °C**DESCRIPTION**

SikaPower®-1576 is a versatile high performing two-component structural epoxy adhesive, which cures at room temperature. When uncured, the product shows a thixotropic paste consistency and it is suitable for large unit bonding. When cured, it is characterized by elevated mechanical properties and adhesion to many substrates. The adhesive shows good ageing resistance.

PRODUCT BENEFITS

- Good adhesion to a wide range of substrates without primer
- High strength and structural performance
- Good ageing resistance under different conditions
- Non-sagging up to 10 mm, suitable for vertical applications
- Slow setting product adapted to larger units
- Accelerated curing with heat
- Low shrinkage

AREAS OF APPLICATION

SikaPower®-1576 is used for structural bonding of a variety of substrates. It is specifically suitable for bonding metallic components or composite structures for applications in transportation and general industry. This product is suitable for professional experienced users only. Tests with actual substrates and conditions have to be performed to ensure adhesion and material compatibility.

CURE MECHANISM

SikaPower®-1576 cures by chemical reaction of the two components at room temperature. The cure rate is 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. The lap-shear strength [MPa] build-up of SikaPower®-1576 at different curing temperatures can be seen in the following table.

Curing Time	23 °C	40 °C	80 °C
0.5 h	-	-	4.5
1 h	-	-	18
4 h	-	10	23
16 h	4	21	
24 h	10	23	
48 h	18		
7 d	21		
14 d	23		

Table 1: Lap-shear strength build-up on GFR-Epoxy (bondline 1 mm)
Grey = Final strength

ADHESION RESULTS

The following table summarizes typical lap-shear strength values on different substrates. These results are indicative only. Due to the diversity of substrates, preliminary tests are mandatory.

Substrate ^A	Strength	FM ^B
Aluminum	12 MPa	C
Mild Steel	21 MPa	C
Stainless Steel	20 MPa	C
GRF-Epoxy	23 MPa	C
GFR-Polyester	6 MPa	S
SMC	8 MPa	S
ABS	6 MPa	S
Powder Coat	11 MPa	S

Table 2: Adhesion results (bondline 1 mm cured 14 days at 23 °C)

^{A)} Pre-treatment: abrading and cleaning

^{B)} Failure mode: Adhesion, Cohesion, Substrate

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®-1576 is dispensed from pails with adequate 2-component equipment or from 1:1 dual cartridges with adequate manual or pneumatic guns. In order to achieve a proper mixing a Nordson Square Turbo Mixer 180A-824 (for 200 ml cartridges) or a 295-620 (for 50 ml cartridges) is required.

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

Removal

Uncured SikaPower®-1576 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-350H or a suitable industrial hand cleaner and water. Do not use solvents on skin!

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

SikaPower®-1576

Dual cartridge	50 ml 200 ml
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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

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.

