

SikaPower®-4720

Two component high-strength panel adhesive

Technical Product Data

Properties	SikaPower-4720 A	SikaPower-4720 B
Chemical base	Epoxy	Amine
Colour (CQP ¹ 001-1)	Black	Tan
Density (CQP 006-4)	1.08 kg/l approx.	1.13 kg/l approx.
Mixing ratio	A:B by volume 2 : 1	
Non-sag properties	good	
Application temperature	10 - 30°C	
Open time ² (CQP 580-1, -6)	60 min	
Mixer open time ²	30 min	
Clamp time ^{2/3} (CQP 580-1, -6)	time to reach 1 MPa 4.5 hours	
Curing time ²	80% of strength 24 hours	
Shore D hardness (ASTM D-2240)	80 approx.	
Tensile strength (CQP-580-5)	24 MPa approx.	
Young's - Modulus (CQP-580-1, -6)	1900 MPa approx.	
Elongation at break (ASTM D-638)	3% approx.	
Tensile lap-shear strength ^{2/3} (CQP 580-1, -6)	14 MPa approx.	
Impact Peel (CQP-580-1, -3)	5 N/mm	
Glass transition temperature (ASTM E-1640)	73°C	
Thermal resistance (CQP 513-1)	1 hour 190°C	
Service temperature	-30 - 120°C	
Shelf life (storage between 5 - 30°C) (CQP 016-1)	24 months	

¹ CQP = Corporate Quality Procedure

² 23°C / 50% r.h.

³ substrate 0.8 mm steel type DC04

Description

SikaPower®-4720 is a two-component high-strength epoxy adhesive with excellent adhesion properties on a wide variety of substrates. It is specifically designed for metal and composite panel bonding. The glass beads guarantee a uniformed and optimal bond line thickness of 0.25 mm. The adhesive cures at room temperature to form a rigid bond.

SikaPower®-4720 is manufactured in accordance with the ISO 9001 / 14001 quality assurance system and the responsible care program.

Product Benefits

- High strength adhesion performance
- Good adhesion to a wide variety of substrates without primer
- Long open time
- Fast curing property
- No running or dripping
- Can be spot welded (uncured)
- Engineered for optimum bond line thickness
- Accelerated curing with heat
- Low odour
- Excellent corrosion protection
- Solvent free

Areas of Application

SikaPower®-4720 is suitable for panel bonding with exposure to high dynamic stress areas such as door skins, rear body panels, roof skins or quarter panels. The adhesive is not intended to use for body structure parts like pillars, sills, crossbeams or engine mounts. Common substrates are metals, particularly aluminum (incl. anodized and rolled), cold rolled steel as well as FRP-substrates. Metal sheets assembled with SikaPower®-4720 (in uncured stage) can be spot welded.

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

Industry



Cure Mechanism

The curing of SikaPower®-4720 takes place by chemical reaction of the two components. The strength build up at different curing temperatures can be seen in the following table.

Time [h]	Lap shear strength [MPa] approx.			
	10°C	23°C	30°C	60°C
1	-	-	-	13
2	-	0.1	2.7	Final strength 14 MPa
4	-	0.1	12	
4.5	-	1.2		
6	-	3		
8	0.1	6		
24	6	12		
48	12			

Table 1: Lap shear strength SikaPower®-4720

Method of Application

Surface preparation

Abrade metals surfaces to bare metal, clean and degrease with acetone or heptane. Additional surface treatment depends on the specific nature of the substrates and the manufacturer process.

Application

SikaPower®-4720 is dispensed from 2 in 1 uTAH cartridges with adequate piston guns. In order to achieve a proper mixing a quadro 8.7 24 GT mixer is required. At low temperatures (10°C) cartridge needs to be warmed up prior the application to increase extrusion speed.

Extrude adhesive without mixer to equalize the filling levels, attach the mixer and dispose of the first few cm of the bead.

For corrosion protection, apply and tool the adhesive in a thin layer on both substrates covering all grinded areas. Apply an adhesive bead on one side 5 mm from the edge to reduce the material squeeze out (except the spot weld points).

Mount the spare part and add clamps at the corners first. Fix it with rivets or spot welding if required or place clamps every 10 cm. One side application will reduce the open time and final strength up to 50% and can decrease the corrosion protection.

For detailed description of handling the cartridge and mixer as well as application process, refer to the Panel Replacement Guide, which is available via the Technical Service Department of Sika Industry. SikaPower®-4720 can be applied at temperature between 10°C and 30°C. Substrates and other equipment have to be kept in the same climatic level.

Curing

SikaPower®-4720 cures at ambient conditions. The curing speed depends on temperature. 10°C higher temperatures would result approx. in doubling the curing speed and reducing the open time by 50%. Curing speed can be accelerated by temperature (max. 85°C) using infra-red laps or ovens.

Removal

Uncured SikaPower®-4720 may be removed from tools and equipment with Sika® Remover-208 or other suitable solvents. 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:

- Safety Data Sheet
- Panel Replacement Guide

Packaging Information

Dual cartridge	195 ml
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Value Bases

All technical data stated in this Product Data Sheet 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.

Legal Notes

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.

