

SikaPower®-490/7

Structural Metal Adhesive for Spot Weld Bonding

Technical Product Data (typical values)

Chemical base	Epoxy/PUR
Color (CQP 001)	Black
Density (uncured) (CQP 576)	1.37 kg/l
Viscosity, 50 °C (122 °F) (CQP 584-1)	400 Pa.s
Application Temperature, nozzle	55-60 °C (131-140 °F)
Curing time @ 180 °C (356 °F) substrate temperature	30 minutes
Tensile Lap-Shear Strength, 23 °C (73 °F), at 0.3mm (CQP 580-1,-6)	20 MPa
Tensile Lap-Shear Strength, -30 °C (-22 °F), at 0.3mm (CQP 580-1,-6)	23 MPa
Tensile Lap-Shear Strength, 80 °C (176 °F), at 0.3mm (CQP 580-1,-6)	16 MPa
Tensile Strength (CQP 580-5,-6)	30 MPa
Elongation at break (CQP 580-5,-6)	10%
T-Peel Strength (CQP 580-2,-6)	7 N/mm
Dynamic Resistance to Cleavage (CQP 580-3,-6)	17 N/mm
Glass transition temperature, DMTA (CQP 509)	85 °C (185 °F)
Shelf Life at (a) 15-25 °C (b) 5-15 °C (c) <5 °C (CQP 584-1)	(a) 7 (b) 9 (c) 12 months

CQP=Corporate Quality Procedure

Description

SikaPower®-490/7 is a one-part, warm-applied, heat-curing structural adhesive based on epoxy and polyurethane. It is designed for metal sheet assembly work and is cured with heat, e.g. in the electrocoat oven, to form a high performance thermoset adhesive. SikaPower®-490/7 is manufactured in accordance with the ISO 9001/14001 quality assurance system and the Responsible Care Program.

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

Product Benefits

- One-part
- High Strength
- Adheres well to oily substrates
- Wash-out resistant
- Suitable for joining different metals
- Spot-weldable
- Distortion-free joining
- Provides corrosion protection
- No damage to substrates
- Contains no solvents, PVC or isocyanates

Areas of Application

SikaPower®-490/7 is suitable for structural bonding of different types of metal. This adhesive is designed for use in combination with spot-welding, riveting, clinching and other mechanical fastening techniques, and in some cases as a partial replacement for them. The bonding of oily substrates (standard anti-corrosion treatment and deep drawing oils, approximately 2 g/m²) is possible due to oil uptake during the heat curing. Adhesion testing should be performed for customer-specific metal and oil combinations.

Industry



Cure Mechanism

SikaPower®-490/7 is cured by heat. The cure rate depends on both temperature and time. The most suitable heat sources are convection ovens. Maximum temperature must not exceed 220 °C (428 °F).

Chemical Resistance

In case of chemical exposure potential and possible resulting effects upon adhesive performance, we recommend project testing; consult Sika Technical Service at 888-832-7452

Method of Application

SikaPower®-490/7 is applied by chop and check pumps. The adhesive is applied in bead form with a recommended diameter of 1 to 3 mm. Because the viscosity is temperature-dependent (see Figure 1), all parts of the application system that are in contact with the adhesive must be heated. We recommend phased temperature increase from 40 °C (104 °F) at the follower plate to 55-60 °C (131-140 °F) at the application unit (nozzle). To prolong the life of the packings and facilitate removal of the cut foil disk we strongly recommend placing the new drum under the heated follower plate for 15 minutes. This will make it easier to remove the foil and ready the pump for deaeration. During extended breaks in operation, such as overnight or on weekends, the equipment must be turned off and allowed to cool down to ambient temperature, and the system (pump and dosage unit) depressurized.

The time between application and curing must be as short as possible, since any uptake of moisture (climate dependent) can cause formation of blisters during heat curing. As a process planning guide, blister formation was not detected after conditioning uncured parts at 23 °C (73 °F) and 75% relative humidity for seven days. However, if suitable conditions cannot be guaranteed, pre-curing for

15 minutes at 160 °C (320 °F) substrate temperature is necessary.

Contact the Technical Service Department of Sika Industry at 888-832-7452 for specific application-related questions.

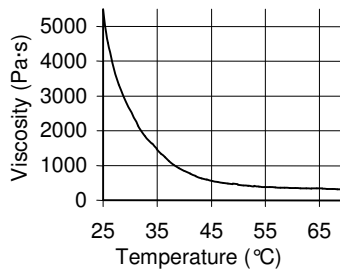


Figure 1: Viscosity as a function of temperature

Removal

Uncured adhesive may be removed from tools and equipment with mineral spirits or another suitable solvent. Strictly follow solvent manufacturer's instructions for use and warnings. Once cured, adhesive can only be removed mechanically. Hands and exposed skin should be washed immediately using a suitable industrial hand cleaner and water. Do not use solvents on hands!

WARNING: IRRITANT, SENSITIZER. Contains Epoxy Resin (CAS 25068-38-6). Causes eye/skin/respiratory irritation. Harmful if swallowed. May cause skin sensitization after prolonged contact. **Deliberate misuse by inhalation of vapors may be harmful or fatal.**

HMIS

Health	*2
Flammability	1
Reactivity	0
Personal Protection	C

First Aid

Eyes – Hold eyelids apart and flush thoroughly with water for 15 minutes. **Skin** – Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water. **Inhalation** – Remove to fresh air. **Ingestion** – Do not induce vomiting. Dilute with water. Contact physician. **In all cases contact a physician immediately if symptoms persist.**

Further Information

Copies of the following publications are available on our website www.sikaindustry.com or by calling 888-832-7452:

- Material Safety Data Sheets
- Product Data Sheet

In case of emergency call:
Chemtrec: 800-424-9300
International: 703-527-3887

Health and Safety Information

For further 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. It is highly recommended to read the actual Material Safety Data Sheet before using the product.

- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- KEEP CONTAINER TIGHTLY CLOSED
- FOR PROFESSIONAL USE ONLY

Packaging Information

Drum	195L (51.5 gal)
------	-----------------

Value Basis

All technical data stated on this Product Data Sheet are based on

Further information available at:
www.sikaindustry.com

Sika Corporation
Industry Division
30800 Stephenson Highway
Madison Heights, MI 48071
USA
Tel. 248 577 0020
Fax 248 577 0810



the results of laboratory tests only. Actual measured data in the field may vary due to site specific conditions which are not known to Sika and beyond our control.

Handling and Storage

Avoid direct contact. Wear personal protective equipment (chemical resistant goggles/gloves/clothing) to prevent direct contact with skin and eyes. Use only in well ventilated areas. Open doors and windows during use. Use a properly fitted NIOSH respirator if ventilation is poor. Wash thoroughly with soap and water after use. Remove contaminated clothing and launder before reuse. Maintain storage of unopened containers below 25°C (77°F), and for extended shelf life, below 5°C (41°F).

Clean Up

In case of spill, ventilate area. Open doors and windows. Wear chemical resistant gloves/goggles/clothing. In absence of proper ventilation use properly fitted NIOSH respirator. Without direct contact, sweep up spilled or excess product and place in suitable sealed container. Dispose of excess product in accordance with applicable local, state and federal regulations.

Limited Material Warranty

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. **NO OTHER WARRANTIES IMPLIED OR EXPRESS SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS**

FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

Legal Notes/Disclaimer

All information provided by Sika Corporation ("Sika") concerning Sika products, including but not limited to, any recommendations and advice relating to the application and use of Sika products, is given in good faith based on Sika's current experience and knowledge of its products when properly stored, handled and applied under normal conditions in accordance with Sika's instructions. In practice, the differences in materials, substrates, storage and handling conditions, actual site conditions and other factors outside of Sika's control are such that Sika assumes no liability for the provision of such information, advice, recommendations or instructions related to its products, nor shall any legal relationship be created by or arise from the provision of such information, advice, recommendations or instructions related to its products. The user of the Sika product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with the full application of the product(s).

Sika reserves the right to change the properties of its products without notice. All sales of Sika product(s) are subject to its current terms and conditions of sale which are available at www.sikacorp.com or by calling 201-933-8800.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Material Safety Data Sheet which are available at www.sikaindustry.com. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Material Safety Data Sheet prior to product use.

Further information available at:
www.sikaindustry.com

Sika Corporation
Industry Division
30800 Stephenson Highway
Madison Heights, MI 48071
USA
Tel. 248 577 0020
Fax 248 577 0810

