

SikaPower[®]-492

Semi crash resistant structural metal adhesive

Technical Product Data

Chemical base	Epoxy hybrid
Color (CQP ¹ 001)	black
Hazard designation	Xi, N
Non-volatile compounds (CQP 576)	> 99 %
Density before / after curing (CQP 576)	1.30 / 1.35 kg/l approx.
Application temperature	50 - 60°C (nozzle)
Viscosity; 50°C, oscillation 5Hz, P/P 25 mm, 1 mm gap (CQP 584-1)	900 Pa·s approx.
Curing time / substrate temperature	20 min / 175°C
Lap shear strength ² , at 0.3 mm (CQP 580-1,-6 / EN 1465)	20 MPa approx.
Lap shear strength ² , -30°C / +80°C, at 0.3 mm (CQP 580-1,-6 / EN 1465)	22 / 15 MPa approx.
Lap shear strength ² , 20' 160°C / 40' 200°C, at 0.3 mm (CQP 580-1,-6 / EN 1465)	19 / 18 MPa approx.
Lap shear strength ³ , 1.5 mm metal sheet, at 0.3 mm (CQP 580-1,-6 / EN 1465)	30 MPa approx.
Dynamic resistance to cleavage ⁴ (CQP 580-3,-6 / ISO 11343)	30 N/mm approx.
T-Peel strength ⁵ (CQP 580-2,-6 / ISO 11339)	9 N/mm approx.
Tensile strength ⁶ (CQP 580-5,-6 / ISO 527)	30 MPa approx.
Elongation at break ⁶ (CQP 580-5,-6 / ISO 527)	8% approx.
Glass transition temperature, DMTA (CQP 509 / DIN EN ISO 6721, EN 61006)	105°C approx.
Shelf life, at 23°C (CQP 584-1)	9 months

¹) CQP = Corporate Quality Procedures

²) DC 04 ZE 75/75 0.8 mm; 3 g/m² Anticorit PL 3802-39 S; adhesive layer: 25 x 10 x 0.3 mm; rate of extension: 10 mm/min.

³) H320 ZE 50/50 1.5 mm; 3 g/m² Anticorit PL 3802-39 S; adhesive layer: 25 x 10 x 0.3 mm; rate of extension: 10 mm/min.

⁴) DC 04 ZE 75/75 0.8 mm; 3 g/m² Anticorit PL 3802-39 S; adhesive layer: 20 x 30 x 0.3 mm; impact speed: 2.0 m/s.

⁵) DC 04 ZE 75/75 0.8 mm; 3 g/m² Anticorit PL 3802-39 S; adhesive layer 25 x 100 x 0.3 mm; rate of extension: 100 mm/min.

⁶) Rate of extension: 2 mm/min.

Description

SikaPower[®]-492 is a one-part, warm-applied, heat-curing high-structural, impact modified adhesive based on epoxy.

SikaPower[®]-492 is designed for sheet metal assembly work in the body shop and is cured with heat, e.g. in the paint oven, to form a high-performance thermoset.

SikaPower[®]-492 is manufactured in accordance with ISO 9001/14001 quality assurance system and with the Responsible Care program.

Product Benefits

- One-part
- High strength
- Adheres well to oily substrates
- Very high resistance to washing out
- Suitable for joining different metals
- Spot-weldable
- Distortion-free joining
- Provides protection against corrosion
- No damage to substrates
- Contains no solvents, PVC or isocyanates

Areas of Application

SikaPower[®]-492 is suitable for high structural bonding of different types of metal. As an adhesive product it 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, approx. 3 g/m²) is possible because of the oil uptake during the heat curing that is an essential part of the process.

Automotive



Method of Application

SikaPower®-492 is applied in bead form with a recommended diameter of 1 to 3 mm. SikaPower®-492 is filtered with a mesh size of 300 µm before packaging. Because the viscosity is temperature-dependent (see Fig. 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 at the follower plate to 55°C at the application unit (nozzle). To prolong the life of the packings and facilitate removal of the cut foil disk we strongly recommend a preheating of the new drum for 15 minutes. This will make it easier to remove the foil. During longer breaks (e.g. over night or at the weekend) the equipment must be cooled down to ambient temperature and switched-off 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 in the interim (climate-dependent) can cause formation of blisters during heat curing. As a guide to process planning, blister formation was not detected after conditioning of uncured parts at 23°C and 80% relative humidity in joined state for two weeks, a drop in dynamic resistance to cleavage was not detected even after four weeks. However, if suitable conditions cannot be guaranteed, pre-curing for 15 minutes at 160°C (substrate temperature) is necessary.

For advice on project-specific application techniques please contact the Corporate System Engineering department (Sika Services AG). For advice on suitable applications (Technical Service) please contact Sika Automotive GmbH.

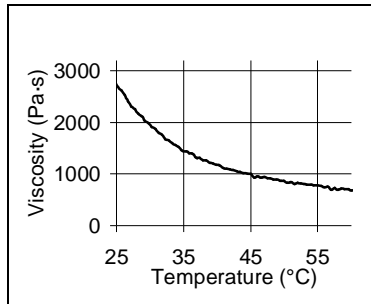


Figure 1: Viscosity as a function of temperature (Equipment: Physica)

Cure Mechanism

SikaPower®-492 is cured by heat. The cure-rate depends both on temperature and elapsed time. The most suitable heat sources are convection ovens. The maximum temperature must not exceed 220°C.

Further Information

Copies of the following publications are available on request:

- Material Safety Data Sheet
- Pump specification

Packaging Information

Cartridges	300 ml
Hobbock ¹⁾	23 l
Hobbock	50 l
Drum	195 l

¹⁾ 280 mm diameter

Value Base

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.

Local Restrictions

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

Health and Safety Information

For information and advice on the safe handling, storage and disposal of the chemical products, users shall refer to the most recent Material Safety Data Sheet 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 product. 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.

Further information available at:

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