

Product Data Sheet

Version 08/2010 (09/2013)

SikaPower®-415 P1

Moisture Pre-Curable/Heat-Curing Body-Shop Sealant

Technical Data

Chemical Base	Epoxy-PUR
Colour (CQP ¹ 001)	Black
Non-volatile Compounds ³ (CQP 576)	>97%
Density uncured/Density cured ³ (CQP 576)	1.4/1.45 kg/L approx.
Viscosity; 20°C, rotation 10 s ⁻¹ , P/P 25 mm, 0.2 mm gap (CQP 584-2)	350 Pa s approx
Application Temperature	20°C to 30°C (nozzle)
Skin Formation ² (at 23°C and 50% relative humidity) Thermal Pre-curing	3-4 hours 5 min at 160°C
Curing Time/Substrate Temperature	25 min/180°C
Lap Shear Strength ²⁺³ , at 2 mm (CQP 580-1,-6/EN 1465)	1.5 MPa approx
Tensile Strength ³⁺⁴ (CQP 580-5, -6/ISO 527)	2 MPa approx
Elongation at Break ³⁺⁴ (CQP 580-5, -6/ISO 527)	100% approx
Glass Transition Temperature ³ , DMTA (CQP 509-1/ISO 61006)	-50°C approx
Shore A Hardness ³ (CQP 574)	55 approx
Service Temperature (permanent)	-40°C to 90°C
Shelf Life, at 15 to 25°C (CQP 584-1)	4 months
¹ CQP = Corporate Quality Procedure ² DC 04 ZE 75/75 0.8 mm; 3 g/m ² Anticorit RP 4107 S; Adhesive Layer: 25 x 15 x 2 mm; Rate of extension: 10 mm/min; ³ Pre-curing: 2 hours at ambient temperature; curing: 30 minutes at 180°C; ⁴ Rate of extension: 200 mm/min.	

Description

SikaPower®-415 P1 is a one-part, cold-applied, humidity or thermal pre-curable, heat-curing sealant based on epoxy and polyurethane. SikaPower®-415 P1 is designed for sealing of seams or joints for sheet metal assembly work and is cured with heat, i.e. in the electrocoat oven, to form an elastic thermoset. Pre-curing takes place at ambient temperature by the formation of a thin skin through exposure to moisture or application of heat. The formation of the skin allows for good wash-out resistance. SikaPower®-415 P1 is filtered with a mesh size of 500 µm before packaging and is manufactured in accordance with the ISO 9001/14001 quality assurance system.

Product Benefits

- One-component;
- Elastic;
- Adheres well to oily substrates;
- Pre-cures by exposure to atmospheric moisture at ambient temperature;
- Good wash-out resistance after pre-curing;
- Pre-curing requires no additional equipment;
- Suitable for sealing various metals, e.g. steel, aluminium, zinc-coated steel, etc.;
- Can be electro- or powder-coated after pre-curing;
- Contains no solvents or PVC.

Areas of Application

SikaPower®-415 P1 is suitable for sealing seams (e.g. laser step seams) and joints for sheet metal assembly work. After application, the sealant forms a thin skin upon exposure to atmospheric moisture (approx 50% relative humidity) at ambient temperatures within approximately four (4) hours, making it resistant to wash out. The bonding of oily substrates (standard anti-corrosion treatment and deep drawing oils, at approx 3 g/m²) is possible due to oil uptake during the heat-curing step that is an essential part of the application process.



Cure Mechanism	SikaPower®-415 P1 forms, at the ambient temperature, a thin skin within approximately four hours thanks to the absorption of atmospheric moisture (at approximately 50% relative humidity). The rate of cure depends both on the temperature and the elapsed time and must be completed within 5 days of application. The most suitable heat source for fully pre-curing is a convection oven; IR emitters or induction equipment may also be used. The maximum temperature must not exceed 220°C for more than 10 minutes.
Method of Application	SikaPower®-415 P1 can be applied at the ambient temperature after sufficient pre-conditioning at between 20 and 30°C, keeping in mind that the product's viscosity is temperature-dependent. A bead of sealant of a recommended minimum layer thickness of 2 mm is applied using a pneumatic gun.
Tooling and Finishing	Once applied, the sealant must be flattened or spread. The use of Sika® Tooling Agent N is recommended for tooling the sealant; however, the sealant must be allowed to dry completely after tooling.
Storage	The cartridges must be stored in a dry area at a temperature between 5 and 15°C. If stored at higher temperatures, the Shelf Life of the product will be reduced. The cartridge, once opened, must be entirely consumed or protected from moisture to avoid curing; the maximum Open Time is 5 days at 23°C and 50% relative humidity, after which time bubbles may form.
Over-Painting	Where assemblies sealed with SikaPower®-415 P1 are to be powder-coated, the sealant must be pre-cured prior to coating. The powder-coating must be tested for compatibility by carrying out preliminary trials. It should be understood that the hardness and film thickness of the powder-coating may impair the elasticity of the sealant and lead to cracking of the coating. For advice on project-specific application techniques, please contact Sika Industry's System Engineering Department.
Packaging	300 ml cartridges
Further Information	Copy of the following publication is available upon request: Material Safety Data Sheet.
Value Bases	All technical data stated in this Product Data Sheet are laboratory test-based. Current measured values may vary due to factors beyond our influence.
Health and Safety Information	For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the current Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data for the appropriate type of substance. Product Data Sheets and Material Safety Data Sheets are available from your local representative or on our website at: www.sika.ca .

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, within their shelf life. 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 recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under www.sika.ca.

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