

## PRODUCT DATA SHEET

## SikaPower®-1280

High performance toughened adhesive for wind turbine blade bonding

## TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

Properties	Component A SikaPower®-1280	Component B SikaPower®-1050
Chemical base	Epoxy	Amine
Color (CQP001-1)	Yellow	Blue
	mixed	Green
Density	1.16 g/cm <sup>3</sup>	1.15 g/cm <sup>3</sup>
	mixed (calculated)	1.16 g/cm <sup>3</sup>
Mixing ratio	by volume by weight	100 : 47 100 : 47
Viscosity (CQP029-4)	25 mm PP, d = 1 mm, 10 s <sup>-1</sup>	120 Pa·s <sup>A</sup> 40 Pa·s <sup>A</sup>
Consistency	Thixotropic paste	
Application temperature	15 – 30 °C	
Curing time (CQP046-9 / ISO 4587)	at 70 °C	4 hours
Tensile strength (CQP543-1 / ISO 527)	45 MPa <sup>A, D</sup>	
E-Modulus (CQP543-1 / ISO 527)	3000 MPa <sup>A, D</sup>	
Elongation at break (CQP543-1 / ISO 527)	3 % <sup>A, D</sup>	
Tensile lap-shear strength (CQP046-9 / ISO 4587)	25 MPa <sup>A, C</sup>	
Critical stress intensity factor K <sub>Ic</sub> (ISO 13586)	3.5 m <sup>0.5</sup> MPa <sup>A, E</sup>	
Critical energy release rate G <sub>Ic</sub> (ISO 13586)	4 N/mm <sup>A, E</sup>	
Glass transition temperature (CQP509-1 / ISO 6721-2)	90 °C	
Shelf life	12 months <sup>F</sup>	

CQP = Corporate Quality Procedure

C) adhesive layer: 25 x 12.5 x 3 mm / on GRE

F) stored between 10 and 30 °C

A) 23 °C / 50 % r.h.

D) tested at 2 mm/min

B) 28 °C / 70 % r.h.

E) CT-specimen (Optical Crack Tracking)

## DESCRIPTION

SikaPower®-1280 is a toughened, high strength, solvent free, thixotropic epoxy adhesive. It shows very good adhesion on fiber-reinforced composites and has been designed for the bonding of wind turbine blades.

## PRODUCT BENEFITS

- Superior fatigue properties
- High resistance against crack initiation and propagation
- Low density
- Long open time at high temperatures and humidity
- Fast curing at moderate temperature
- Low exothermic peak temperature
- Very good non-sag properties

## AREAS OF APPLICATION

SikaPower®-1280 is used for bonding highly stressed components in the manufacturing process of wind turbine rotor blades (shells, shear webs, etc.).

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

CURE MECHANISM

The curing of SikaPower®-1280 takes place by chemical reaction of the two components. High temperatures speed up the curing process and low temperatures slow down the curing process. The final glass transition temperature, as well as the tensile and shear strengths, may be increased with higher curing temperature.

CHEMICAL RESISTANCE

In view of potential chemical or thermal exposure, it is required to conduct a project related testing.

METHOD OF APPLICATION

Surface Preparation

SikaPower®-1280 adheres usually well on fresh epoxy composites without additional pretreatment, if applied subsequently after the removal of the protecting peel ply. 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 pretreatment steps must be confirmed by preliminary tests on original substrates considering specific conditions in the assembly process.

Application

SikaPower®-1280 is applied out of drums with automatic application equipments. For advice on selecting and setting up a suitable pump system, contact the System Engineering Department of Sika Industry.

Removal

Uncured SikaPower®-1280 may 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 cleaning towels or a suitable industrial hand cleaner and water. Do not use solvents on skin.

STORAGE CONDITIONS

SikaPower®-1280 has to be kept between 10 °C and 30 °C in a dry place. Do not expose to direct sunlight or frost. After opening of the packaging, the contents have to be protected against humidity.

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®-1280

Drum	220 kg
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SikaPower®-1050

Drum	220 kg
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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 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 can always refer to the most recent version of the local Product Data Sheet for the relevant product, available on our website. The information in any downloaded version is valid as of the time of download.

PRODUCT DATA SHEET

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