

PRODUCT DATA SHEET

SikaPower®-830

High performance toughened adhesive for wind turbine blade bonding

TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

Properties	SikaPower®-830 (A)	SikaPower®-051
Chemical base	Epoxy	Amine
Color (CQP001-1)	Yellow	Blue
	mixed	Green
Density	1.15 g/cm ³	1.15 g/cm ³
	mixed	1.15 g/cm ³
Mixing ratio	A:B by weight	100 : 47
Viscosity (CQP029-4)	at 10 s ⁻¹	120 Pa·s ^A
Consistency		40 Pa·s ^A
Application temperature		Thixotropic paste
Open time (CQP046-11 / ISO 4587)		15 – 30 °C
Curing time (CQP046-9 / ISO 4587)	at 70 °C	120 min ^{B, C}
Tensile strength (CQP543-1 / ISO 527)		4 hours
E-Modulus (CQP543-1 / ISO 527)		45 MPa ^{D, E}
Elongation at break (CQP543-1 / ISO 527)		3000 MPa ^{D, E}
Tensile lap-shear strength (CQP046-9 / ISO 4587)		3 % ^{D, E}
Glass transition temperature (CQP509-1 / ISO 6721)		20 MPa ^{C, D}
Shelf life		90 °C
		12 months

CQP = Corporate Quality Procedure
 C) adhesive layer: 25 x 12.5 x 3 mm / on GFRP

A) tested at 20 °C
 D) 23 °C / 50 % r.h.

B) 28 °C / 70 % r.h.
 E) tested at 2 mm / min

DESCRIPTION

SikaPower®-830 is a tough, high strength, solvent-free, thixotropic epoxy adhesive. It is designed for bonding of wind turbine blades.

PRODUCT BENEFITS

- High resistance to fatigue and against crack initiation and propagation
- Low density
- Long open time at high temperatures and humidity
- Fast curing at moderate temperatures
- Low exothermic peak temperature
- Very good non-sag properties
- DNV-CP-0086 approved

AREAS OF APPLICATION

SikaPower®-830 is designed for bonding highly stressed components in the manufacturing process of wind turbine blades (shells, shear webs, etc.).

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

CURE MECHANISM

SikaPower®-830 cures by chemical reaction of the two components. Higher temperatures speed up the curing process and lower slow it down. 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®-830 adheres usually well to epoxy composites if applied subsequently after the removal of the protective peel ply. Surfaces must be clean, dry and free from grease, oil and dust. Surface treatment may be required depending on the specific nature of the substrates. All pre-treatment steps must be confirmed by preliminary tests on original substrates considering specific conditions in the assembly process.

Application

SikaPower®-830 is applied out of drums with automatic application equipment. For advice on selecting and setting up a suitable pump system, contact the System Engineering Department of Sika Industry.

Removal

Uncured SikaPower®-830 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 solvent on skin.

STORAGE CONDITIONS

SikaPower®-830 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®-830 (A)	
Drum	220 kg
SikaPower®-051	
Drum	220 kg

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 enduse 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.

