

PRODUCT DATA SHEET

Sikadur® WTG-1280

High performance toughened adhesive for wind turbine blade bonding

TYPICAL PRODUCT DATA (FURTHER VALUES SEE SAFETY DATA SHEET)

Properties	Component A Sikadur® WTG-1280	Component B Sikadur® WTG-1050
Chemical base	Epoxy	Amine
Color (CQP001-1)	Yellow	Blue
	mixed	Green
Density (uncured)	1.15 g/cm ³	1.13 g/cm ³
	mixed	1.14 g/cm ³
Mixing ratio	by volume 100 : 47	
	by weight 100 : 47	
Viscosity (CQP029-4)	PP25, d = 1 mm, 10 s ⁻¹	95 Pa·s ^A
		40 Pa·s ^A
Consistency	Thixotropic paste	
Application temperature	15 – 30 °C	
Open time (CQP046-11 / ISO 4587)	120 min ^{B, C}	
Curing time (CQP046-9, ISO 4587)	at 70 °C 4 hours	
Tensile strength (CQP543-1 / ISO 527)	45 MPa ^{A, D}	
E-Modulus (CQP543-1 / ISO 527)	3000 MPa ^{A, D}	
Elongation at break (CQP543-1 / ISO 527)	3 % ^{A, D}	
Tensile lap-shear strength (CQP046-9 / ISO 4587)	25 MPa ^{A, C}	
Critical stress intensity factor K _{Ic} (ISO 13586)	3.5 MPa m ^{1/2} ^{A, E}	
Critical energy release rate G _{Ic} (ISO 13586)	4 N/mm ^{A, E}	
Glass transition temperature (CQP509-1 / ISO 6721)	90 °C	
Shelf life	12 months ^F	

CQP = Corporate Quality Procedure

C) adhesive layer: 25 x 12.5 x 3 mm / GFRP

F) stored between 10 °C 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

Sikadur® WTG-1280 is a tough, 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

- High resistance to crack initiation and propagation
- Low density
- Long open time at high temperatures and humidity
- Fast curing at moderate temperatures
- Low exothermic peak temperature

AREAS OF APPLICATION

Sikadur® WTG-1280 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.

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CURE MECHANISM

The curing of Sikadur® WTG-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 and thermal exposure, it is required to conduct a project related testing.

METHOD OF APPLICATION

Surface preparation

Sikadur® WTG-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

Sikadur® WTG-1280 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 Sikadur® WTG-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 or a suitable industrial hand cleaner and water.

Do not use solvents on skin.

STORAGE CONDITIONS

Sikadur® WTG-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

Sikadur® WTG-1280

Drum	220 kg
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Sikadur® WTG-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

Any information or suggestions for use concerning Sika's products, which we either in writing or orally have given buyers or end-users of the product, have been given in good faith based on our own experiences and based on approved praxis and the technological and scientific knowledge on the time of giving such suggestions and information, which are given without any type of guarantees, and which do not lead to any further responsibility from Sika Danmark A/S, besides what is stated in the sales agreement in question. The buyer or end-user should themselves investigate or otherwise make sure, that our products are suitable for the use in question and further make sure that the products are kept and used correct and in agreement with the published rules and considering the actual conditions in order to avoid damages or less satisfactory results. Any order is accepted and any deliverance is affected according to the general terms of sales and delivery from Sika Danmark A/S, which are considered known and accepted, and which could be handed out when asked for. Our catalogues are not up-dated automatically. The present product data sheet is only for use in Denmark. Values stated in the present product data sheet should be seen as recommended, unless stated otherwise.

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