

DELO-DUOPOX[®] DB8989

modified epoxy resin | 2C | light-fixable / room-temperature-curing

light-fixable, suitable for DELO-AUTOMIX, very good temperature resistance

Special features of product

- compliant with RoHS Directive 2015/863/EU
- halogen-free according to IEC 61249-2-21
- low-outgassing according to ECSS-Q-70-02

Function

- structural adhesive
- electronic adhesive

Typical area of use

- -40 - 150 °C
- metal bondings

Curing

Suitable lamp types LED 365 nm, LED 400 nm

Typical light fixation time

*intensity 1,000 mW/cm²
LED 400 nm* 1 - 20 s

Curing time

*until initial strength
at rt approx. +23 °C
tensile shear strength 1 - 2 MPa* 5.5 h

*until final strength
at rt approx. +23 °C* 168 h

Processing

Mixing ratio A : B - volume 2 : 1

Mixing ratio A : B - weight 1.55 : 1

Processing time after mixing

*in 3 g batch
at rt approx. +23 °C* 45 min

*in 100 g batch
at rt approx. +23 °C* 30 min

Storage life in unopened original container

at +15 °C to +30 °C 6 month(s)

Technical properties

Color in cured condition in 0.1 mm layer thickness white

Transparency in cured condition in 0.1 mm layer thickness translucent

Color in cured condition in 1 mm layer thickness white

Transparency in cured condition in 1 mm layer thickness opaque

Filler particle type minerals

Parameters

Density 1.16 g/cm³
Component A | liquid

Density 1.49 g/cm³
Component B | liquid

Viscosity 170000 mPa·s
Component A | liquid | Rheometer | Shear rate: 10 1/s | Gap: 500 µm

Viscosity 160000 mPa·s
Component B | liquid | Rheometer | Shear rate: 10 1/s | Gap: 500 µm

Light-fixable layer thickness 3 mm
Based on PA 125 | 400 nm | 200 mW/cm² | 60 s | at approx. +23 °C

Tensile shear strength 25 MPa
*Based on DIN EN 1465 | **AI** | **AI** | Pretreatment: sand-blasted | at approx. +23 °C | 7 d*

Tensile shear strength 28 MPa
*Based on DIN EN 1465 | **AI** | **AI** | Pretreatment: sand-blasted | 80 °C | 60 min*

Compression shear strength 28 MPa
*DELO Standard 5 | **AI** | **AI** | at approx. +23 °C | 168 h*

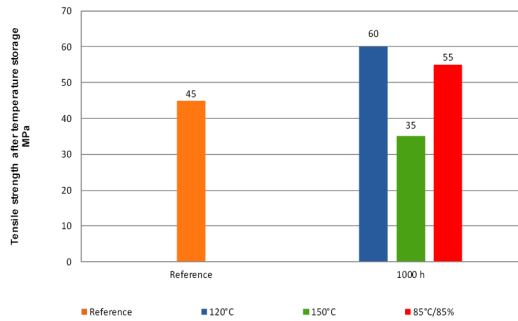
Compression shear strength 32 MPa
*DELO Standard 5 | **AI** | **AI** | at approx. +23 °C | 168 h | Type of storage: Constant climate | Storage temperature: 85 °C | Humidity: 85 % | Duration: 1000 h*

Compression shear strength 25 MPa
*DELO Standard 5 | **Glass** | **AI** | 400 nm | 200 mW/cm² | 60 s | Plus | at approx. +23 °C | 168 h*

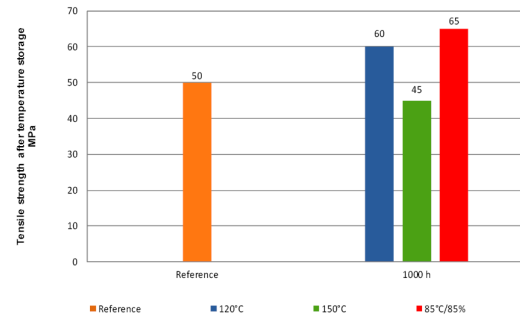
Compression shear strength <i>DELO Standard 5 Glass AI 400 nm 200 mW/cm² 60 s Plus at approx. +23 °C 168 h Type of storage: Constant climate Storage temperature: 85 °C Humidity: 85 % Duration: 1000 h</i>	30	MPa
Compression shear strength <i>DELO Standard 5 Glass AI at approx. +23 °C 168 h</i>	30	MPa
Compression shear strength <i>DELO Standard 5 Glass AI at approx. +23 °C 168 h Type of storage: Constant climate Storage temperature: 85 °C Humidity: 85 % Duration: 1000 h</i>	40	MPa
Compression shear strength <i>DELO Standard 5 Glass PA6 Pretreatment: Annealing 400 nm 200 mW/cm² 60 s Plus at approx. +23 °C 168 h</i>	6	MPa
Compression shear strength <i>DELO Standard 5 Glass PA6 Pretreatment: Annealing at approx. +23 °C 168 h</i>	6	MPa
Compression shear strength <i>DELO Standard 5 LCP GF30 LCP GF30 at approx. +23 °C 168 h</i>	13	MPa
Compression shear strength <i>DELO Standard 5 PBT PBT at approx. +23 °C 168 h</i>	5	MPa
Compression shear strength <i>DELO Standard 5 PBT PBT at approx. +23 °C 168 h Type of storage: Constant climate Storage temperature: 85 °C Humidity: 85 % Duration: 1000 h</i>	2	MPa
Tensile strength <i>Based on DIN EN ISO 527 400 nm 200 mW/cm² 60 s Plus at approx. +23 °C 168 h</i>	50	MPa
Tensile strength <i>Based on DIN EN ISO 527 at approx. +23 °C 168 h</i>	45	MPa
Elongation at tear <i>Based on DIN EN ISO 527 400 nm 200 mW/cm² 60 s Plus at approx. +23 °C 168 h</i>	1	%
Elongation at tear <i>Based on DIN EN ISO 527 at approx. +23 °C 168 h</i>	4	%
Young's modulus <i>Based on DIN EN ISO 527 400 nm 200 mW/cm² 60 s Plus at approx. +23 °C 168 h</i>	4700	MPa
Young's modulus <i>Based on DIN EN ISO 527 at approx. +23 °C 168 h</i>	4000	MPa
Shore hardness D <i>Based on ASTM D 2240 400 nm 200 mW/cm² 60 s Plus at approx. +23 °C 168 h</i>	85	

Shore hardness D <i>Based on DIN EN ISO 868 at approx. +23 °C 168 h</i>	82	
Glass transition temperature <i>DMTA 400 nm 200 mW/cm² 60 s Plus at approx. +23 °C 168 h</i>	121	°C
Glass transition temperature <i>DMTA at approx. +23 °C 168 h</i>	114	°C
Coefficient of linear expansion <i>DELO Standard 26 TMA Evaluation T: -35 °C - 70 °C 400 nm 200 mW/cm² 60 s Plus at approx. +23 °C 168 h</i>	55	ppm/K
Coefficient of linear expansion <i>DELO Standard 26 TMA Evaluation T: -30 °C - 70 °C at approx. +23 °C 168 h</i>	55	ppm/K
Coefficient of linear expansion <i>DELO Standard 26 TMA Evaluation T: 120 °C - 230 °C at approx. +23 °C 168 h</i>	160	ppm/K
Coefficient of linear expansion <i>DELO Standard 26 TMA Evaluation T: 140 °C - 220 °C 400 nm 200 mW/cm² 60 s Plus at approx. +23 °C 168 h</i>	160	ppm/K
Shrinkage <i>DELO Standard 13 400 nm 200 mW/cm² 60 s Plus at approx. +23 °C 7 d</i>	3	vol. %
Shrinkage <i>DELO Standard 13 at approx. +23 °C 7 d</i>	3	vol. %
Water absorption <i>Based on DIN EN ISO 62 400 nm 200 mW/cm² 60 s Plus at approx. +23 °C 168 h Type of storage: Media Medium: Distilled water</i>	0.13	wt. %
Water absorption <i>Based on DIN EN ISO 62 at approx. +23 °C 168 h Type of storage: Media Medium: Distilled water</i>	0.14	wt. %

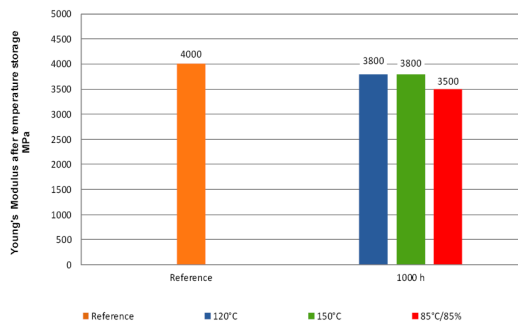
Tensile strength after temperature storage / based on DIN EN ISO 527



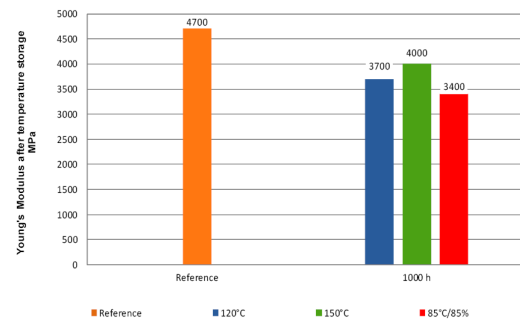
Tensile strength after temperature storage / based on DIN EN ISO 527
light fixation LED 400nm, intensity 200mW/cm², 60s



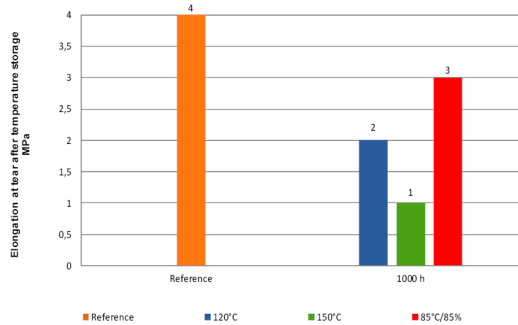
Young's Modulus after temperature storage / based on DIN EN ISO 527



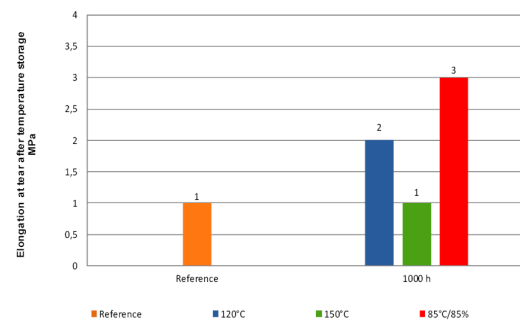
Young's Modulus after temperature storage / based on DIN EN ISO 527
light fixation LED 400nm, intensity 200mW/cm², 60s



Elongation at tear after temperature storage / based on DIN EN ISO 527



Elongation at tear after temperature storage / based on DIN EN ISO 527
light fixation LED 400nm, intensity 200mW/cm², 60s



Converting table

°F	= (°C x 1.8) + 32	1 MPa	= 145.04 psi
1 inch	= 25.4 mm	1 GPa	= 145.04 ksi
1 mil	= 25.4 µm	1 cP	= 1 mPa·s
1 oz	= 28.3495 g	1 N	= 0.225 lb

General curing and processing information

The curing time stated in the technical data was determined in the laboratory. It can vary depending on the adhesive quantity and component geometry and is therefore a reference value. Curing can be supported or accelerated by heat input. Additional heat input can change the physical properties of the product. All curing or light fixation parameters depend on material thickness and absorption, adhesive layer thickness, lamp type and distance between lamp and adhesive layer. Unless otherwise specified, the values were measured after 168 h at approx. 23 °C / 50 % r. h., and the values of heat-cured samples were measured after 24 h at approx. 23 °C / 50 % r. h.

General

The data and information provided are based on tests performed under laboratory conditions. Reliable information about the behavior of the product under practical conditions and its suitability for a specific purpose cannot be concluded from this. It is the customer's responsibility to test the suitability of a product for the intended purpose by considering all specific requirements and by applying standards the customer deems suitable (e. g. DIN 2304-1). Type, physical and chemical properties of the materials to be processed with the product, as well as all actual influences occurring during transport, storage, processing and use, may cause deviations in the behavior of the product compared to its behavior under laboratory conditions. All data provided are typical average values or uniquely determined parameters measured under laboratory conditions. The data and information provided are therefore no guarantee for specific product properties or the suitability of the product for a specific purpose.

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All products provided by DELO are subject to DELO's General Terms of Business. Verbal ancillary agreements are deemed not to exist.

Instructions for use

You can find further details in the instructions for use.

The instructions for use are available on www.DELO-adhesives.com.

We will be pleased to send them to you on demand.

Occupational health and safety

See material safety data sheet.

Specification

Nothing contained in this Technical Datasheet shall be interpreted as any express warranty or guarantee. This Technical Datasheet is for reference only and does not constitute a product specification. Please ask our responsible Sales Engineer for the applicable product specification which includes defined ranges. DELO is neither liable for any values and content of this Technical Datasheet nor for oral or written recommendations regarding the use, unless otherwise agreed in writing. This limitation of liability is not applicable for damages resulting from intent, gross negligence or culpable breach of cardinal obligations, nor shall it apply in case of death or personal injury or in case of liability under any applicable compulsory law.

CONTACT

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