DELO-DUOPOX® DB8989
Multi-purpose 2c epoxy resin, cures at room temperature, light fixable

**Base**
- epoxy resin
- two-component

**Use**
- high-strength construction adhesive
- multi-purpose
- in applications with elevated temperature stress
- in mechanical engineering, car manufacturing and tool construction
- in electrical engineering and electronics
- the cured product is normally used in a temperature range of -40 °C to +150 °C; depending on the application, other limits may be more reasonable
- compliant with RoHS directive 2015/863/EU
- halogen-free according to IEC 61249-2-21

**Processing**
- supplied ready for use and can be processed well from the original container
- components A and B must be mixed homogeneously in the mixing ratio stated below
- using the DELO-AUTOMIX system for processing is especially advantageous
- the surfaces to be bonded must be dry as well as free of dust, grease and other contaminations

**Curing**
- proceeds at room temperature (approx. 23 °C)
- Fixation possible by irradiation with UVA light in a wavelength in the range of 320 – 400 nm in typically 1 – 20 seconds. Independently thereof the mixed adhesive cures completely at room temperature in the non-irradiated areas as well.
- increased temperatures (e.g. +60 °C to +120 °C) accelerate curing
- applying heat could change physical characteristics

**Technical data**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>whitish opaque</td>
</tr>
<tr>
<td>uncured in a layer thickness of approx. 1 mm</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>white translucent</td>
</tr>
<tr>
<td>uncured in a layer thickness of approx. 0.1 mm</td>
<td></td>
</tr>
<tr>
<td>Filler</td>
<td>minerals</td>
</tr>
</tbody>
</table>

**Mixing ratio**

- (A : B) according to volume: 2 : 1
- (A : B) according to weight: 1.55 : 1
Density of component A [g/cm³]  
DIN 66137-2, measured with helium pycnometer at room temperature (approx. 23 °C)  
1.16

Density of component B [g/cm³]  
DIN 66137-2, measured with helium pycnometer at room temperature (approx. 23 °C)  
1.49

Viscosity of component A [mPas]  
at 23 °C, rheometer (Paar) shear rate 10/s  
170000

Viscosity of component B [mPas]  
at 23 °C, rheometer (Paar) shear rate 10/s  
160000

Processing time in 3 g preparation [min]  
at room temperature (approx. 23 °C)  
45

Processing time in 100 g preparation [min]  
at room temperature (approx. 23 °C)  
30

Fixing time by light [s]  
LED 400 nm, intensity: 1000 mW/cm² DELOLUXcontrol  
1 - 20

Curing time until initial strength [h]  
tensile shear strength 1 - 2 MPa at room temperature (approx. 23 °C), no irradiation  
3.5

Curing time until final strength [d]  
at room temperature (approx. 23 °C), no irradiation  
7

Tensile shear strength Al/Al [MPa]  
by the criteria of DIN EN 1465, sand-blasted component thickness 1.6 mm, gap 0.1 mm curing: 7 d at room temperature (approx. 23 °C)  
25

Tensile shear strength Al/Al [MPa]  
by the criteria of DIN EN 1465, component thickness 1.6 mm, gap 0.1 mm curing: 1 h at 80 °C + 24 h at room temperature (approx. 23 °C)  
28

Compression shear strength Al/Al [MPa]  
DELO standard 5, blank Curing: 7d at room temperature (approx. 23 °C)  
28

Compression shear strength Al/Al [MPa]  
DELO standard 5, blank Curing: 7d at room temperature (approx. 23 °C) + 1000 h 85°C/85%  
32

Compression shear strength glass/PA6 [MPa]  
DELO Standard 5 curing: 7 d at room temperature (approx. 23 °C)  
6

Compression shear strength glass/PA6 [MPa]  
DELO Standard 5 curing: Combination of irradiation and room temperature curing LED 400 nm, intensity 200 mW/cm², DELOLUXcontrol, 60s 7 d room temperature (approx. 23 °C)  
6

Compression shear strength glass/Al [MPa]  
DELO Standard 5 curing: 7 d at room temperature (approx. 23 °C)  
30

Compression shear strength glass/Al [MPa]  
DELO standard 5 curing: 7d at room temperature (approx. 23 °C) + 1000 h 85°C/85%  
40
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compression shear strength glass/Al [MPa]</td>
<td>25</td>
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<tr>
<td>DeLO Standard 5, curing: Combination of irradiation and room temperature curing LED 400 nm, intensity 200 mW/cm², DELOLUXcontrol, 60s 7 d room temperature (approx. 23 °C)</td>
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<tr>
<td>Compression shear strength glass/Al [MPa]</td>
<td>30</td>
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<tr>
<td>DeLO Standard 5, curing: Combination of irradiation and room temperature curing LED 400 nm, intensity 200 mW/cm², DELOLUXcontrol, 60s 7 d room temperature (approx. 23 °C) + 1000 h 85°C/85%</td>
<td></td>
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<tr>
<td>Compression shear strength PBT GF30/ PBT GF30 [MPa]</td>
<td>5</td>
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<tr>
<td>DeLO Standard 5, curing: 7 d at room temperature (approx. 23 °C)</td>
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<tr>
<td>Compression shear strength PBT GF30/ PBT GF30 [MPa]</td>
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<tr>
<td>DeLO standard 5, blank, Curing: 7d at room temperature (approx. 23 °C) + 1000 h 85°C/85%</td>
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<tr>
<td>Compression shear strength LCP E130i / LCP E130i [MPa]</td>
<td>13</td>
</tr>
<tr>
<td>DeLO Standard 5, curing: 7 d at room temperature (approx. 23 °C)</td>
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<tr>
<td>Temperature stability Al/Al at +80 °C [MPa]</td>
<td>6</td>
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<tr>
<td>DIN EN 1465, sand-blasted, Component thickness: 1.6 mm, Curing: 7 d at room temperature (approx. 23 °C)</td>
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<tr>
<td>Temperature stability Al/Al at +80 °C [MPa]</td>
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</tr>
<tr>
<td>DIN EN 1465, sand-blasted, component thickness: 1.6 mm, curing: 1h at +80 °C</td>
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<tr>
<td>Tensile strength [MPa]</td>
<td>45</td>
</tr>
<tr>
<td>According to standard DIN EN ISO 527, Curing: 7 d room temperature (approx. 23 °C)</td>
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<tr>
<td>Tensile strength [MPa]</td>
<td>50</td>
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<tr>
<td>According to DIN EN ISO 527, Curing: Combination of irradiation and room temperature curing LED 400 nm, intensity 200 mW/cm², DELOLUXcontrol, 60s 7 d room temperature (approx. 23 °C)</td>
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<tr>
<td>Elongation at tear [%]</td>
<td>4</td>
</tr>
<tr>
<td>According to standard DIN EN ISO 527, Curing: 7 d room temperature (approx. 23 °C)</td>
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<tr>
<td>Elongation at tear [%]</td>
<td>1</td>
</tr>
<tr>
<td>According to DIN EN ISO 527, Curing: Combination of irradiation and room temperature curing LED 400 nm, intensity 200 mW/cm², DELOLUXcontrol, 60s 7 d room temperature (approx. 23 °C)</td>
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<tr>
<td>Young’s modulus [MPa]</td>
<td>4000</td>
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<tr>
<td>According to standard DIN EN ISO 527, Curing: 7 d room temperature (approx. 23 °C)</td>
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<tr>
<td>Young’s modulus [MPa]</td>
<td>4700</td>
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<td>According to DIN EN ISO 527, Curing: Combination of irradiation and room temperature curing LED 400 nm, intensity 200 mW/cm², DELOLUXcontrol, 60s 7 d room temperature (approx. 23 °C)</td>
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<tr>
<td>Shore hardness D</td>
<td>82</td>
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<tr>
<td>Curing: 7 d at room temperature (approx. 23 °C)</td>
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<tr>
<td>Shore hardness D</td>
<td>85</td>
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<tr>
<td>Curing: LED 400 nm, intensity: 200 mW/cm² DELOLUXcontrol, irradiation time: 60 s after 7 d at room temperature (approx. 23 °C)</td>
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</tbody>
</table>
Glass transition temperature [°C] 114
2nd heating process, DMTA
curing: 7 d room temperature (approx. 23 °C)

Glass transition temperature [°C] 121
2nd heating process, DMTA
LED 400 nm, intensity 200 mW/cm², DELOLUXcontrol, 60s
curing: Combination of irradiation and room temperature curing
7 d room temperature (approx. 23 °C)

Coefficient of linear expansion [ppm/K] 55
TMA, DELO Standard 26
in a temperature range of +35 °C to +100 °C
curing: 7 d room temperature (approx. 23 °C)

Coefficient of linear expansion [ppm/K] 160
TMA, DELO Standard 26
in a temperature range of +120 °C to +175 °C
curing: 7 d room temperature (approx. 23 °C)

Coefficient of linear expansion [ppm/K] 55
TMA, DELO Standard 26
in a temperature range of +35 °C to +100 °C
curing: Combination of irradiation and room temperature curing
LED 400 nm, intensity 200 mW/cm², DELOLUXcontrol, 60s
7 d room temperature (approx. 23 °C)

Coefficient of linear expansion [ppm/K] 160
TMA, DELO Standard 26
in a temperature range of +120 °C to +175 °C
curing: Combination of irradiation and room temperature curing
LED 400 nm, intensity 200 mW/cm², DELOLUXcontrol, 60s
7 d room temperature (approx. 23 °C)

Shrinkage [vol. %] 3
DELO Standard 13
curing: 7 d at room temperature (approx. 23 °C)

Shrinkage [vol. %] 3
DELO Standard 13
LED 400 nm, intensity: 200 mW/cm² DELOLUXcontrol, irradiation time: 60 s
after 7 d at room temperature (approx. 23 °C)

Water absorption [weight %] 0.14
DELO Standard 16
curing: 7 d at room temperature (approx. 23 °C)

Water absorption [weight %] 0.13
DELO Standard 16
LED 400 nm, intensity: 200 mW/cm² DELOLUXcontrol, irradiation time: 60 s
after 7 d at room temperature (approx. 23 °C)

Decomposition temperature [°C] 302
Curing: Combination of irradiation and room temperature curing
LED 400 nm, intensity 200 mW/cm², DELOLUXcontrol, 60s
7 d room temperature (approx. 23 °C)

Storage life at room temperature (approx. 23 °C) 3 months
in unopened original container
Performance under temperature influence

### Tensile strength after 1,000 h thermal ageing
by the criteria of DIN EN ISO 527
layer thickness: 4 mm
curing: 7d room temperature (approx. 23 °C)
measured at room temperature (approx. 23 °C)

![Graph: Tensile strength vs. Temperature](image)

### Elongation at tear after 1,000 h thermal ageing
by the criteria of DIN EN ISO 527
layer thickness: 4 mm
curing: 7d room temperature (approx. 23 °C)
measured at room temperature (approx. 23 °C)

![Graph: Elongation at tear vs. Temperature](image)

### Young's Modulus after 1,000 h thermal ageing
by the criteria of DIN EN ISO 527
layer thickness: 4 mm
curing: 7d room temperature (approx. 23 °C)
measured at room temperature (approx. 23 °C)

![Graph: Young's Modulus vs. Temperature](image)
Instructions and advice

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.
Nothing contained herein shall be construed to indicate the non-existence of any relevant patents or to constitute a permission, encouragement or recommendation to practice any development covered by any patents, without permission of the owner of this patent.
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
The instructions for use of DELO-DUOPOX are available on: www.DELO.de. We will be pleased to send them to you on demand.

Occupational health and safety
see material safety data sheet