

# NEW DELO<sup>®</sup>-ML

## High-strength, fast and flexible

Anaerobic adhesives for metal bonding and mixed connections



### Your benefits at a glance:

- Extensive consultation on your specific bonding task
- Specific adhesive selection
- Sample bondings and tests
- Documentation of all test and measuring results

# DELO

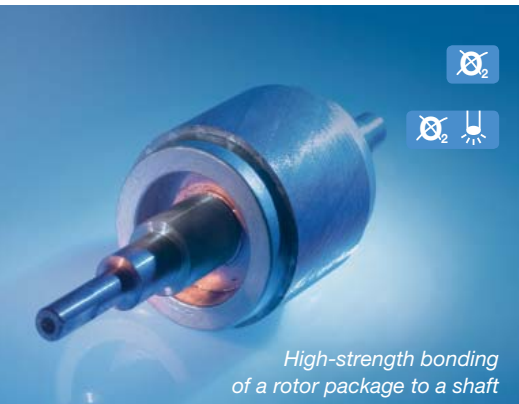
### Which adhesive for which application?

	DELO <sup>®</sup> -ML					
	5327	UB160	DB133	DB135/DB136	DB180	DB154
High flexibility	–	–	+++	++	++	+
High temperature range of use	+++	++	+	++	++	++
High strength	+++	+++	++	+++	+++	+++
Tension-equalizing	–	–	+++	++	++	+
Dual-curing	–	–	✓	✓	✓	✓
	anaerobic curing		anaerobic UV-curing with UV light (320–380 nm)	anaerobic light-curing with UV light or visible light (320–450 nm)		
Color	green		colorless	clear-yellowish DB136, DB180: fluorescent		yellow fluorescent
Viscosity at +23 °C	300 cP (=mPas)	10,000 cP (=mPas)	700 cP (=mPas)	1,200 cP (=mPas)	17,000 cP (=mPas)	6,000 cP (=mPas)
Curing time until initial strength at rt (approx. +23 °C), anaerobic with Znph screws	2–4 min	2–4 min	3–6 min	2–4 min	3–6 min	2–4 min
Min. irradiation time DELO <sup>®</sup> Standard 23	–	–	25 s	10 s	10 s	6 s
Off-torque with Mon 46 Nm	70 Nm	70 Nm	55 Nm	60 Nm	60 Nm	65 Nm
Compression shear strength [MPa] according to ISO 10123	4,875 psi (33 MPa)	5,802 psi (40 MPa)	4,061 psi (28 MPa)	5,802 psi (40 MPa)	5,802 psi (40 MPa)	5,076 psi (35 MPa)
Tensile shear strength	Al/Al	1,595 psi (11 MPa)	1,160 psi (8 MPa)	1,740 psi (12 MPa)	1,885 psi (13 MPa)	1,885 psi (13 MPa)
	St/St	2,321 psi (16 MPa)	2,031 psi (14 MPa)	2,031 psi (14 MPa)	2,321 psi (16 MPa)	2,031 psi (14 MPa)
Elongation at tear DIN EN ISO 527	n. d.	n. d.	130 %	30 %	40 %	4 %
Temperature range of use	–76 to +392 °F (–60 to +200 °C)	–76 to +356 °F (–60 to +180 °C)	–40 to +248 °F (–40 to +120 °C)	–76 to +356 °F (–60 to +180 °C)	–76 to +356 °F (–60 to +180 °C)	–76 to +356 °F (–60 to +180 °C)

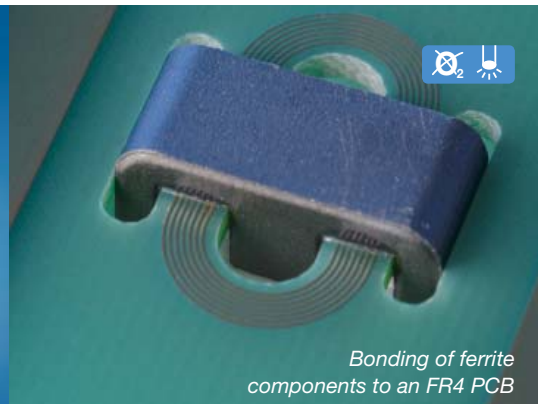
DB = Dual Bonding      UB = Universal Bonding  
n. d. not determinable

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High-strength bonding of a rotor package to a shaft



Bonding of ferrite components to an FR4 PCB



Bonding of a steel stator to an aluminum housing; figure: ebm-papst



Bonding of pocket magnets into a rotor

## DELO<sup>®</sup>-ML 5327 DELO<sup>®</sup>-ML UB160 DELO<sup>®</sup>-ML DB154

### Application areas

- High-strength metal bonding
- Multi-purpose
- Securing, bonding and sealing

### Properties

- DELO<sup>®</sup>-ML 5327: low-viscous, good flow behavior
- DELO<sup>®</sup>-ML UB160: specific high-viscous setting
- DELO<sup>®</sup>-ML DB154: light fixation possible, tension-equalizing
- Very fast anaerobic curing
- High strength
- High temperature stability

### Application examples

- Ferrite and magnet bonding
- Stator bonding
- Shaft-to-hub connections
- Screw securing
- Thread sealing / bonding

## DELO<sup>®</sup>-ML DB133

### Application areas

- Impact-resistant bonding
- Mixed metal-to-plastic bondings
- Fast fixing of components by UV light
- Ideal for laminar bonding

### Properties

- High-strength
- Impact-resistant
- Tension-equalizing, elongation at tear up to 130 %
- UV curing possible, therefore insensitive to ambient light
- Good flow behavior

### Application examples

- Ferrite and magnet bonding
- Stator bonding
- Sensor bonding
- Deep-drawn components (smooth surfaces)

## DELO<sup>®</sup>-ML DB135 DELO<sup>®</sup>-ML DB136

### Application areas

- Impact-resistant metal bonding
- Impact-resistant mixed connections
- Components with dissimilar coefficients of thermal expansion
- Fast fixing of components by UV or visible light

### Properties

- Tension-equalizing, elongation at tear up to 30 %
- DELO<sup>®</sup>-ML DB136: Easy application control thanks to fluorescence
- Good flow behavior
- High-strength

### Application examples

- Ferrite and magnet bonding
- Stator bonding
- Sensor bonding
- Screw securing
- Deep-drawn components (smooth surfaces)

## DELO<sup>®</sup>-ML DB180

### Application areas

- Tension-equalizing metal bonding
- Tension-equalizing mixed connections
- Components with dissimilar coefficients of thermal expansion
- Applications on vertical surfaces
- Fast fixing of components by UV or visible light

### Properties

- Specific high-viscous setting
- Flexible at permanently high temperatures
- Easy application control thanks to fluorescence
- High-strength

### Application examples

- Ferrite and magnet bonding
- Stator bonding
- Sensor bonding
- Screw securing
- Deep-drawn components (smooth surfaces)