

ONEBOND EP POWER METAL 60

Description

OneBond EP Power Metal 60 is a two-part toughened structural epoxy adhesive for use on metal. It offers higher rigidity, strength, environmental and temperature resistance than OneBond PU Flex 12, for bonding and weld-bonding fenders, rear body panels, roofs, door reinforcements, door skins, bonnet skins and floor pans. It is also suitable to bond the bed panels and metal and composite side panels of vans, trucks and buses. It is non-conductive and provides corrosion protection.

Features and Benefits

- Skin time of 60 minutes and fixture time of 4 hours, however the curing process can be accelerated with heat
- Parts can be spot welded even if the adhesive is not fully cured
- Very good gap filling properties
- Can withstand peak temperatures of up to +200°C (paint bake)
- Thixotropic, does not sag. For vertical applications.
- It contains glass beads (0,25 mm)
- Once cured it can be abraded and over-painted
- Low conductivity, provides corrosion protection
- Shelf life of 24 months when stored in original containers at 5°C - 25°C

Typical component properties⁽¹⁾

		Unit	Resin (Component A) EPOXY	Hardener (Component B) AMINE
Appearance			Black	Tan
Odor			Odorless	Slight amine
Density	@+25°C	g/ml	1,08	1,13
Viscosity @+25°C		cP	Thixotropic paste	Thixotropic paste
Ratio by volume			2	1
Ratio by weight			1,9	1

1: These are typical values and should not be construed as specifications.

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Typical curing properties⁽¹⁾⁽²⁾

	Unit	Mixture
Open time (pot life) @+23°C	Minutes	60
Working time @+23°C	Minutes	90
Handling time @+23°C	Hours	4
Full cure time @+23°C	Hours	24

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2: Heat accelerated cure possible (max 150°C).

Typical properties of the cured material⁽¹⁾

	Unit	Mixture	Test Method
Tensile Strength @+23°C	MPa	30	ASTM D-638
Young's Modulus @+23°C	MPa	4500	ASTM D-638
Elongation at Break @+23°C	%	4	ASTM D-638
Hardness Shore D		80	ASTM 2240

	Unit	Mixture	
Glass Transition Temperature			
G' Onset		49	ASTM E-1640
G'' Peak		-80, -50, 57	ASTM E-1640
Tan Delta Peak		-80, -49, 73	ASTM E-1640
Minimum gap	mm	0,25	

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Lap Shear Strength⁽¹⁾⁽²⁾

Substrate	Unit	Mixture	Test Method
Cold Rolled Steel (1,5mm)	N/mm ²	27 ⁽³⁾	ISO 4587
Cold Rolled Steel (0,8mm)	N/mm ²	24 ⁽⁵⁾	ISO 4587
Hot Dipped Galvanized Steel (0,7mm)	N/mm ²	13 ⁽⁵⁾	ISO 4587
Alloyed Galvanized Steel (0,7mm)	N/mm ²	18 ⁽³⁾	ISO 4587
6111 Aluminium Alloy (0,9mm)	N/mm ²	12 ⁽⁶⁾	ISO 4587
5052 Aluminium Alloy (0,6mm)	N/mm ²	12 ⁽⁶⁾	ISO 4587
ABS	N/mm ²	3 ⁽⁴⁾	ISO 4587
SMC	N/mm ²	9 ⁽⁴⁾	ISO 4587

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2: Test Conditions: preparation: Solvent wipe, Orbital Abrasion (80rgd), Bond Line: 0,25mm, Cure: 7 days at 23°C, Test temperature: 23°C, Crosshead speed: 13mm/min.

3: Cohesive failure of the adhesive. 4: Substrate failure. 5: Substrate deformation. 6: Mixed failure: adhesive failure and cohesive failure of the adhesive.

Application

Abrade, clean and degrease the metal surface with OneBond One Cleaner and allow to dry before applying the adhesive.

For composites (SMC, RTM, CFRP) abrade and clean the surface with a solvent wipe before applying the adhesive.

Use gloves to avoid skin contact with the adhesive.

Adhesive application using a 195ml cartridge: (1) Remove the cartridge cap and dispense a small amount of adhesive to make sure that both steams are flowing uniformly and freely. (2) Connect the static mixer to the cartridge outlet. (3) The first 5ml of adhesive should be discarded to ensure a proper mix. (4) Begin dispensing the adhesive.

The excess of uncured adhesive can be cleaned with ketone type solvents.

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Note: can be applied with a 1K manual caulking gun with a thrust ratio of 26:1 or with OneBond OP34PI pneumatic gun.

Packaging

Coaxial cartridge 195ml – 12 pieces per box

Storage

	Unit	Resin (Component A) EPOXY	Hardener (Component B) AMINE
Recommended temperature	°C	15 - 32	15 - 32
Storage stability / Shelf life (4)	Months	24	24

4: Stored in the original sealed containers at the recommended temperature.

Safety Considerations

Safety Data Sheets (SDS) are available from OneBond. SDS include information regarding the physical, health, and environmental health hazards, safety precautions, for products handling, storing and disposal. SDS are available in the language of the country or area of destination and may include locally applicable health and safety regulations. SDS are updated regularly and can be downloaded from www.onebondadhesives.com. OneBond encourages users to review the up-to-date SDS before handling or using any product.

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