

Permabond TA4246 is a 2-part, no-mix, room temperature curing structural adhesive. It is ideal for use on a wide variety of substrate materials and forms a very high strength structural bond with excellent environmental durability and chemical resistance. It has high peel strength and excellent impact resistance and can be used to replace rivets or welding to give a more lightweight, durable assembly. Use with Permabond Initiator 46.

Physical Properties

Chemical base	Methyl methacrylate
Colour	Off-white liquid
Viscosity	30,000 mPa.s
Density	1.02
Ratio of use	10:1 approximately

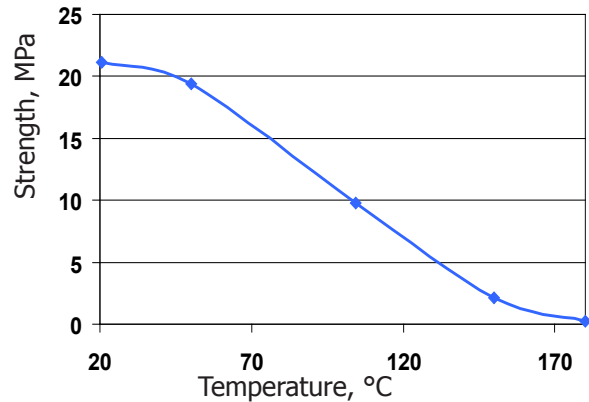
Typical Performance

Cure Speed		~3minutes †
Gap fill		Up to 0.75mm
Working strength		15-30 minutes
Full strength		24 hours
Shear strength		35 MPa (steel)
Peel strength		180 N/25mm
Tensile strength		30 MPa
Impact strength		>60KJ/m ²
Coefficient of thermal expansion		80 x 10 ⁻⁶ 1/K
Thermal conductivity		0.1 W/m ^{°K}
Dielectric constant		4.6 Mhz
Dielectric strength		30-50 KVmm
Volume resistivity		2 x 10 ¹³ Ohm.cm
Service temperature*		-60 to +120°C

†This information should be used as a guide only, since values obtained depend on the specific nature of the surfaces involved and the gap.

*Higher temperatures may be endured for short periods, providing the parts are not unduly stressed.

Hot Strength



Shear Strengths

ABS	12 MPa (substrate failure)
Aluminium (acid etched)	28 MPa
Aluminium (solvent wiped)	13 MPa
Beechwood	10 MPa (substrate failure)
Brass	9 MPa
Galvanised steel	7 MPa
Glass	16 MPa (substrate failure)
GRP	8 MPa (substrate failure)
Nylon	11 MPa
Phenolic	12 MPa (substrate failure)
PMMA	9 MPa
Polycarbonate	19 MPa (substrate failure)
PVC	19 MPa (substrate failure)
Steel (abrade & degrease)	35 MPa
Steel (oil contaminated)	20 MPa
Steel (solvent wiped)	23 MPa

Surface Preparation

Surfaces should be clean, dry and grease-free before applying the adhesive. Permabond Cleaner A is recommended for the degreasing of most surfaces. Some metals such as aluminium, copper and its alloys will benefit from light abrasion with emery cloth (or similar), to remove the oxide layer.

Adhesive Application

- Surfaces must be clean, dry and grease-free prior to bonding.
- Apply Initiator 46 to one surface.
- Apply adhesive to the other surface.
- Assemble the components using sufficient force to spread the adhesive thinly. Parts should be bonded immediately and within a maximum of two hours of applying the Initiator.
- Maintain pressure until handling strength is achieved. The time required will vary according to the joint design and surfaces being bonded.
- Allow 24 hours for adhesive to fully cure. Accelerated cure times may be achieved by heating.

Storage and Handling

Storage Temperature	5 to 25°C
Shelf Life Stored in original unopened containers	6 months, 12 months if re-refrigerated.

Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene. Full information can be obtained from the Material Safety Data Sheet.

Other Products Available

Anaerobics

- Toughened
- Gas & water approved
- High temperature resistance
- Flexible

Cyanoacrylates

- Low bloom / low odour
- Flexible
- High temperature resistance

Epoxies

- Fast cure
- Toughened
- Flexible grades

Toughened Acrylics

- Rapid cure
- Low odour
- Pre-mixed
- Gap filling

UV Light Cured

- Glass / plastic bonding
- Optically clear
- Non-yellowing

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