

Permabond TA4310 is a 2-part, 1:1 toughened acrylic adhesive. Its toughening makes it ideal for bonding dissimilar materials where differential thermal expansion and contraction could be an issue. It is easy to use with a delayed initiation, allowing accurate alignment of components. The strength develops quickly allowing clamps to be removed and a quick turnaround time when used in a production situation.

Physical Properties

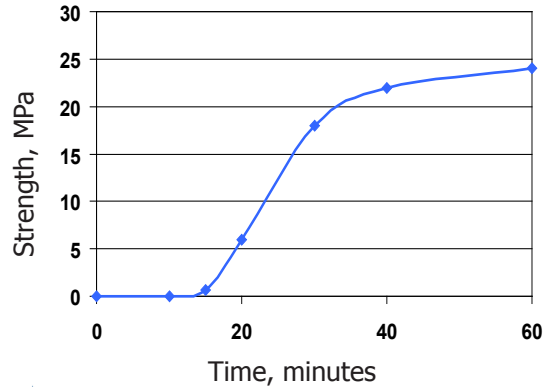
Chemical type	Methacrylic		
	Resin	Hardener	Mixed
Colour	White	Brown	Cream
Viscosity, mPa.s	Thixotropic light paste		
Density	1.05	1.01	1.03
Ratio of use	1.1 by volume		

Typical Performance

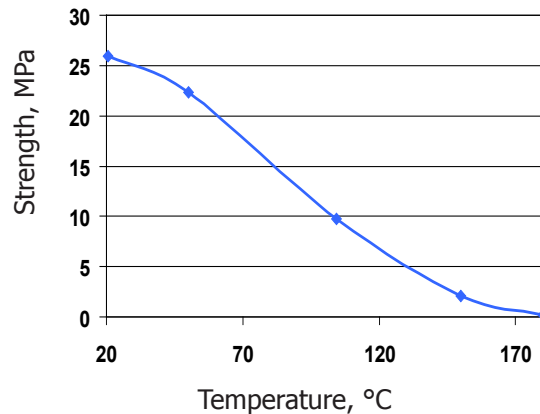
Gap fill		Up to 2mm
Handling strength		15 minutes
Working strength		25-30 minutes
Full strength	DIN 53283	24 hours
Shear strength	ASTM D-1002	26 MPa (steel)
Tensile strength	DIN 53288	28 MPa
Coefficient of thermal expansion	ASTM D-696	80 x 10 ⁻⁶ 1/K
Thermal conductivity	ASTM C-177	0.1 W/m ² K
Dielectric constant	ASTM D-150	4.6 Mhz
Dielectric strength	ASTM D-149	30-50 KVmm
Volume resistivity	ASTM D-257	2 x 10 ¹³ Ohm.cm
Service temperature*		-60 to +120°C

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

Strength Development



Hot strength



Shear Strengths

Steel	26 MPa
Aluminium	9.4 MPa
Galvanised steel	21 MPa
Zintec	21 MPa
ABS	9.1 MPa (substrate failure)
GRP	5.9 MPa
High impact polystyrene	4.4 MPa
Polycarbonate	7.2 MPa (substrate failure)
Perspex	5 MPa (substrate failure)
UPVC	6.1 MPa (substrate failure)

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 a thin bead of adhesive pre-mixed through a static mixer nozzle.
- Assemble components and clamp.
- 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 7°C
Shelf Life Stored in original unopened containers	6 months

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

UV Light Cured

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

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The information given and the recommendations made herein are based on our experience and are believed to be accurate. No guarantee as to, or responsibility for, their accuracy can be given or accepted, however, and no statement herein is to be treated as a representation or warranty. In every case we urge and recommend that purchasers, before using any product, make their own tests to determine, to their own satisfaction, its suitability for their particular purposes under their own operating conditions.