

Features & Benefits

- Adhesion to a wide variety of substrates
- Fast cure at room temperature
- Can be used with or without nozzle
- High shear and peel strength
- Good impact strength
- Good chemical resistance

Description

PERMABOND TA4302 is a 2-part, 1:1 toughened acrylic adhesive. It can be used to bond a wide variety of materials including metals, plastics, GRP, ceramics, wood and other substrates. It is convenient to use in an easy-to-dispense cartridge or it can be used bead on bead without a mixing nozzle.

Typical Performance of Cured Adhesive

Shear strength (mild steel)	22-25 N/mm ² <i>(3200 -3600 psi)</i>
Peel strength (ISO 4578)	75-120 N/25mm <i>(16-27 PIW)</i>
Tensile strength (DIN53288)	30N/mm ² <i>(4350 psi)</i>
Coefficient of thermal expansion (ASTM D-696)	80 x 10 ⁻⁶ 1/K
Thermal conductivity (ASTM C-177)	0.1 W/(m.K)
Dielectric constant (ASTM D-150)	4.6 MH
Dielectric strength (ASTM D-149)	30-50 kVmm
Volume resistivity (ASTM D-257)	2 x 10 ¹³ Ohm.cm

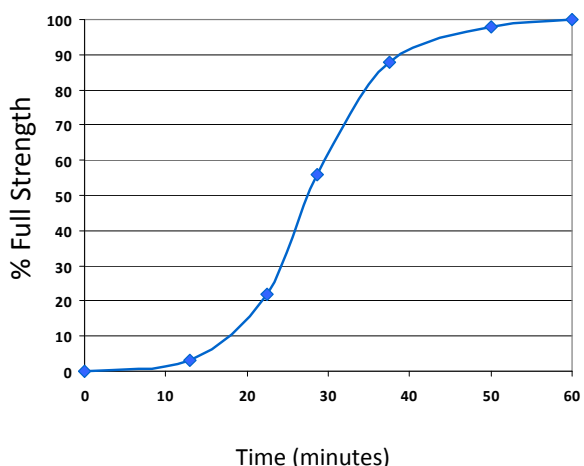
Physical Properties of Uncured Adhesive

	TA4302 A	TA4302B
Chemical composition	Methyl methacrylate	Methyl methacrylate
Appearance	Pink	Green
Viscosity @ 25°C	4000-5000mPa.s (cp)	4000-5000mPa.s (cp)
Density	1.05	0.98

Typical Curing Properties

Ratio of use	1 : 1
Maximum gap fill	0.5 mm <i>(0.02 in)</i>
Handling time	3-5 minutes
Working strength	15 - 30 minutes
Full cure	24 hours

Strength Development

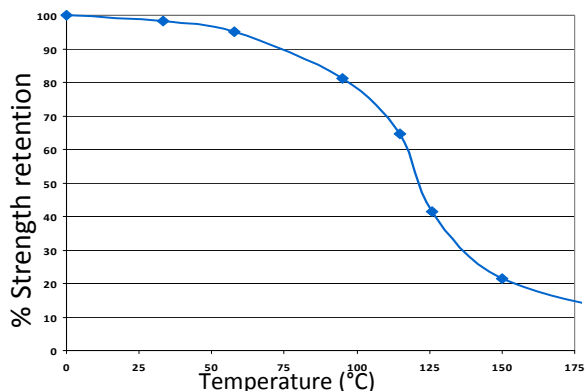


Graph shows typical strength development of bonded components at 23°C. An increase of 8°C in temperature will halve the cure time. Lower temperatures will result in a slower cure time.

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Temperature Resistance



TA4302 can withstand higher temperatures for brief periods (such as for paint baking and wave soldering processes) providing the joint is not unduly stressed. The minimum temperature the cured adhesive can be exposed to is -40°C (-40°F) depending on the materials being bonded.

Adhesion to Various Substrates

ABS	8.3 MPa (substrate failure)
Aluminium (abraded)	18 MPa
Aluminium (as received)	10 MPa
Galvanised steel	14 MPa
GRP (gelcoat)	3.7 MPa
GRP (raw)	5.5 MPa (substrate failure)
High impact polystyrene	2.8 MPa
Perspex	4.3 MPa (substrate failure)
Polycarbonate	7 MPa (substrate failure)
Stainless steel	20 MPa
Steel	25 MPa
UPVC	6.1 MPa (substrate failure)
Zintec	13 MPa

Additional Information

This product is not recommended for use in contact with strong oxidizing materials. This product may affect some thermoplastics and users must check compatibility of the product with such substrates. Information regarding the safe handling of this material may be obtained from the material safety data sheet (MSDS).

Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene.

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.

Directions for Use

- 1) Surfaces must be clean, dry and grease-free.
- 2) Apply a thin bead of adhesive pre-mixed through a static mixer nozzle. If no mixing nozzle is being used, make sure one component is extruded on top of each other (not side by side).
- 3) Alternatively apply a thin layer of resin on one component and hardener on the other.
- 4) Assemble components and clamp.
- 5) Maintain pressure until handling strength is achieved. The time required will vary according to the joint design and surfaces being bonded.
- 6) Allow 24 hours for adhesive to fully cure. Accelerated cure times may be achieved by heating.

Storage & Handling

Storage Temperature	5 to 25°C (41 to 77°F)
Shelf Life Stored in original unopened containers	6 months

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