

Features & Benefits

- Adhesion to a wide variety of substrates
- Fast cure at room temperature
- Excellent adhesion to metals and ferrites
- Acid-free and non-corrosive
- No mix application
- High shear strength
- Good impact strength
- Good chemical resistance

Description

PERMABOND® TA459 is a structural acrylic adhesive designed primarily for bonding metals, ferrites, ceramics and some thermoplastics. This product was specifically designed to be non-corrosive to sensitive copper parts or other electrically conductive surfaces. The fast curing rate and rapid strength development of this material allows for increased production rate.

Use TA459 with Initiator 41 (or Initiator 43 for use on plastics).

Physical Properties of Uncured Adhesive

Chemical composition	Urethane methacrylate
Appearance	Blue, thixotropic
Viscosity @ 25°C	20rpm: 15,000 – 25,000 mPa.s (cP) 2.5rpm: 50,000 – 100,000 mPa.s (cP)
Specific gravity (resin)	1.1

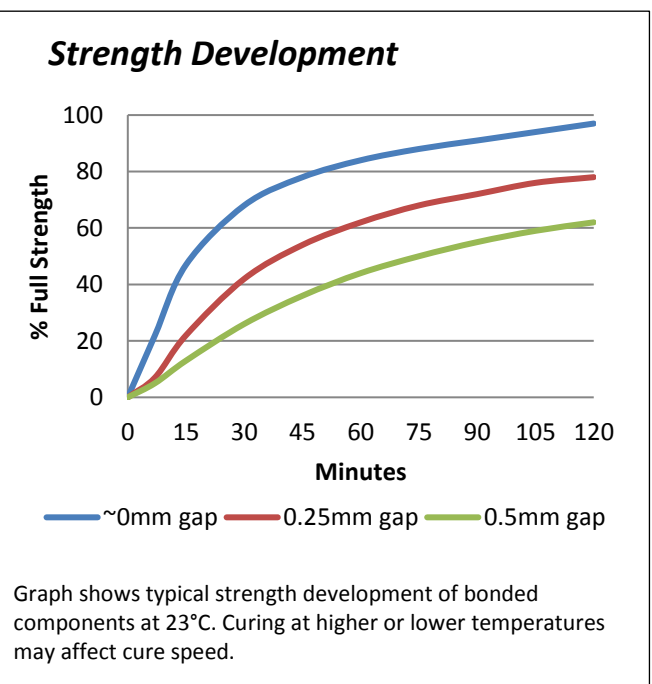
Typical Curing Properties (with Initiator 41)

Ratio of use	10:1.5 approximately
Maximum gap fill	0.5 mm (0.02 in)
Fixture time (mild steel) @23°C	No gap: 20-40 secs
Handling time (mild steel) (0.3 N/mm ² shear strength is achieved) @23°C	No gap: 40-75 secs
Working strength (mild steel) @23°C	No gap: 3-5mins
Full cure @23°C	24 hours

Typical Performance of Cured Adhesive

Shear strength (ISO4587)*	3 min cure @25°C: Steel: 9 N/mm ² (1300 psi) Steel/ferrite: 4 N/mm ² (600 psi)
	24hr cure @25°C: Steel: 20-25 N/mm ² (2900-3600 psi) Steel/ferrite: >14 N/mm ² (>2000 psi) (substrate failure) Zinc: 12-18 N/mm ² (1700-2610 psi)
Peel strength (aluminium) (ISO 4578)	85-100 N/25mm (18-22 PIW)
Tensile strength (ISO37)	20-30N/mm ² (2900-4400 psi)
Impact strength (ASTM D-950)	15-20 kJ/m ²
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
Dielectric strength (ASTM D-149)	30-50 kV/mm
Volume resistivity (ASTM D-257)	2 x 10 ¹³ Ohm.cm

*Strength results will vary depending on the level of surface preparation and gap.



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