

Features & Benefits

- Adhesion to a wide variety of substrates
- Fast cure at room temperature
- No mix application
- High shear and peel strength
- Good impact strength
- Good chemical resistance

Description

PERMABOND TA435 is a structural acrylic adhesive designed primarily for bonding metals, ferrites, ceramics and some thermoplastics. This adhesive may be used in a variety of structural bonding applications, due to its versatile performance capabilities. TA435 provides high strength while maintaining excellent flexibility, resulting in tough, durable bonds with outstanding impact and peel resistance. Handling strength is achieved in a few minutes at room temperature by using **Permabond Initiator 41**.

Physical Properties of Uncured Adhesive

Chemical composition	Modified acrylic – solvent free
Appearance	Amber liquid
Viscosity @ 25°C	85,000 - 95,000 mPa.s (cP)
Density	1.0

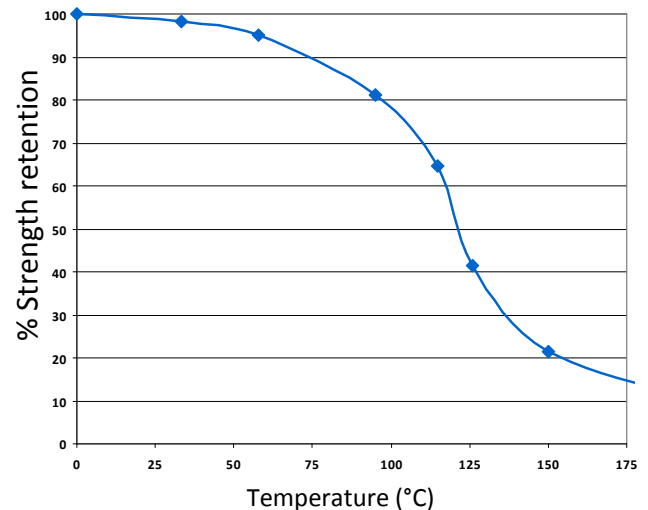
Typical Curing Properties

Ratio of use		10 : 1.5 approximately
Maximum gap fill		Up to 0.5 mm
Handling time	Gap : ~0mm (0 in) 0.25mm (0.01 in) 0.5mm (0.02 in)	<2 minutes 10 minutes 20 minutes
Working strength		30-60 mins
Full cure		24 hours

Typical Performance of Cured Adhesive

Shear strength (mild steel)	15-25 N/mm ² (2200-3600 psi)
Peel strength (ISO 4578)	85-100 N/25mm (18-22 PIW)
Tensile strength (DIN53288)	25 N/mm ² (3600 psi)
Impact strength (ASTM D-950)	25 Nmm/mm ²
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

Temperature Resistance



TA435 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 -55°C (-65°F) depending on the materials being bonded.

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Environmental Resistance

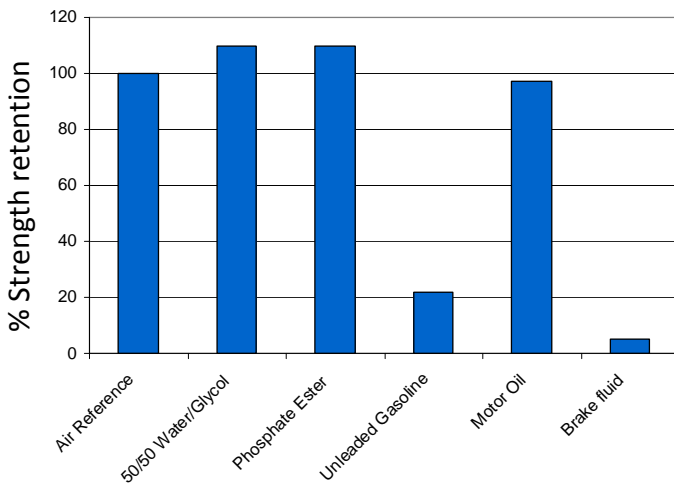
All values were generated on as received steel lap shears as described in ASTM D 1002.

Adhesive was cured at room temperature for 48 hours prior to environmental exposure. Test pieces were assembled with no induced gap and subjected to continuous exposure for 1000 hours at the testing temperature and then the shear strength was tested at room temperature.

1000 hours @	% strength retention
95°C	110% *
120°C	118% *
150°C	132% *
175°C	127% *
205°C	87%

*The shear strength is higher the room temperature control because heating the adhesive causes it to become more rigid, resulting in a higher strength.

Chemical Resistance



Specimens were immersed for 30 days at 85°C and tested at room temperature.

Additional Information

This product is not recommended for use in contact with strong oxidizing materials. Where aqueous washing systems are used to clean the surfaces before bonding, these aqueous washes can affect the cure and performance of the adhesive. 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 Initiator 41 to one surface.
- 3) Apply adhesive to the other surface.
- 4) 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.
- 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	12 months

Contact Permabond:

Europe: Tel. +44 (0)1962 711661

UK Helpline: 0800 975 9800

Deutschland: 0800 10 13 177

France: 0805 11 13 88

info.europe@permabond.com

US: Tel. +1 732-868-1372

Helpline: 800-640-7599

info.americas@permabond.com

Asia: Tel. +86 21 5773 4913

info.asia@permabond.com

www.permabond.com

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