

Features & Benefits

- 💧 Excellent chemical resistance
- 💧 Improved fatigue life
- 💧 Lower cost than interference fit
- 💧 Low shrinkage during cure
- 💧 WRAS approval for drinking water

Description

Permabond A118 is an anaerobic adhesive designed to provide permanent locking and sealing of metal parts such as bearings, gears, studs and other threaded components. It exhibits high strength, excellent durability and resistance to vibration, fatigue and fretting corrosion. These features allow machining tolerances to be relaxed, and mechanical locking devices to be eliminated, with consequent cost savings.

Physical Properties of Uncured Adhesive

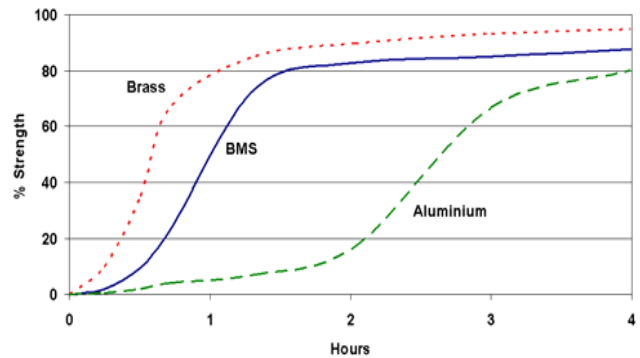
Chemical composition	Acrylic
Appearance	Green
Viscosity @ 25°C	500 mPa.s (cP)
Density	1.1
UV fluorescence	Yes

Typical Curing Properties

Maximum gap fill	0.12 mm 0.005 in
Maximum thread size	M20 ¼"
Handling strength (steel)	15 minutes
Working strength	1 hour
Full strength	24 hours

**Handling time at 23°C / 73°F. Copper and its alloys will make the adhesive cure more quickly, while oxidised or passivated surfaces (like stainless steel) will reduce cure speed. To reduce curing time, use Permabond activator A905 or ASC10. Alternatively, increasing the curing temperature will reduce curing time.*

Strength Development



Cure times are typical at 23°C. Copper and its alloys will follow the faster cure while oxidised or passivated surfaces like stainless steel will tend towards the slower curve. Lower temperatures or large gaps will tend to extend the cure time. To reduce the cure time the use of Permabond A905, ASC10, or heat can be considered.

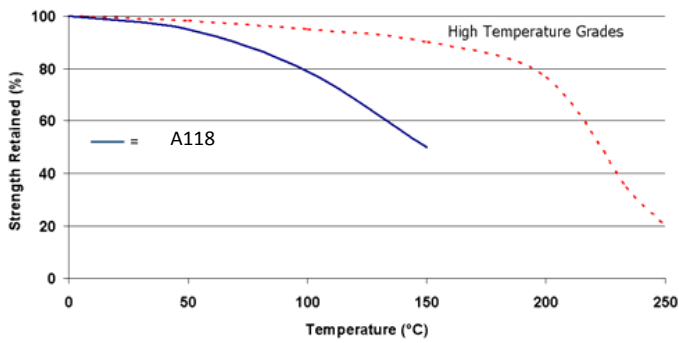
Typical Performance of Cured Adhesive

Torque strength (M10 Zn plated ISO10964)	Break 33 Nm 290 in.lb Prevail 58 Nm 520 in.lb
Shear strength (steel collar & pin)	21 MPa 3000 psi
Coefficient of thermal expansion	90 x 10 ⁻⁶ mm/mm/°C
Dielectric strength	11 mV/mm
Thermal conductivity	0.19 W/(m.K)

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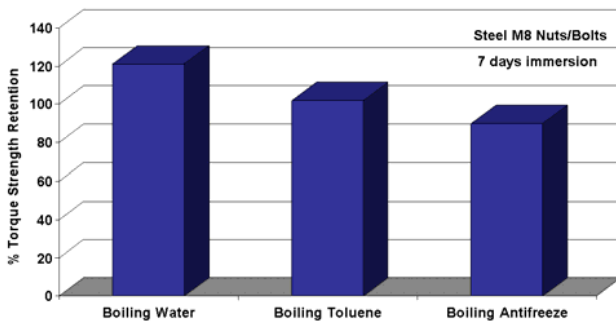
Temperature Resistance



"Hot strength" shear strength tests performed on mild steel. 24hr cure at room temperature and conditioned to pull temperature for 30 minutes before testing.

A118 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.

Chemical Resistance



This product is not recommended for use in contact with steam, strong oxidizing materials and polar solvents although will withstand a solvent wash without any bond strength deterioration.

Surface Preparation

Though the anaerobic adhesives will tolerate a slight degree of surface contamination, best results are obtained on clean, dry and grease free surfaces. The use of a suitable solvent-based cleaner (such as acetone or isopropanol) is recommended.

In general, roughened surfaces (~25µm) give higher bond strengths than polished or ground surfaces.

To reduce the curing time, especially on inactive surfaces (such as zinc, aluminium and stainless steel), the use of Permabond A905 or ASC10 can be considered.

Directions for Use

- 1) Apply a circumferential bead; preferentially to the female component. Assemble with a twisting action.
- 2) For larger components use thixotropic products to prevent run off.
- 3) Take care to ensure adhesive does not enter ball races or other mechanisms.

Storage & Handling

Storage Temperature	5 to 25°C (41 to 77°F)
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.	

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