

Features & Benefits

- Instant low pressure seal
- Does not shred or dry out
- Excellent chemical resistance
- Good high pressure resistance
- WRAS approval for drinking water

Description

Permabond® A1044 is a rapid curing sealant designed to lock and seal metal pipe connections, offering very good resistance to even the most aggressive chemicals. Permabond A1044 can be used to seal against most gases and liquids and can provide an instant pressure seal, minimising down time and speeding up production processes. Unlike PTFE tape or hemp, Permabond A1044 will not shred or dry out, so it will provide a durable seal, helping to extend the life of the components.

Physical Properties of Uncured Adhesive

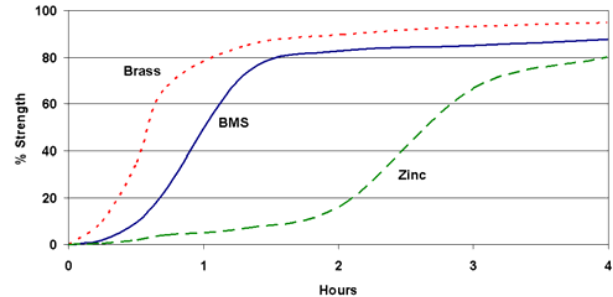
Chemical composition	Acrylic
Appearance	White
Viscosity @ 25°C	70,000 mPa.s (cP) Thixotropic
Specific gravity	1.09
UV fluorescence	Yes

Typical Curing Properties

Maximum gap fill	0.5 mm 0.02 in
Maximum thread size	M80 3 in
Handling strength (steel)	15 minutes
Working strength	1 hours
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.

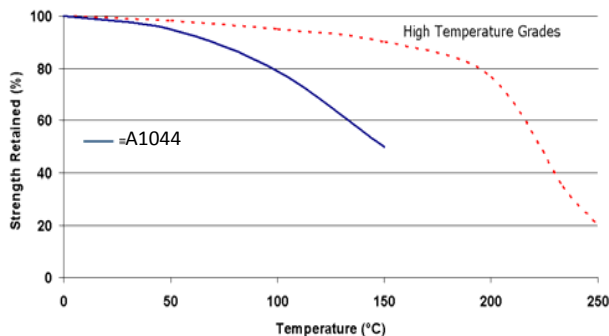
Typical Performance of Cured Adhesive

Torque strength (M10 Zn plated ISO10964)	Break 24 Nm 210 in.lb Prevail 12 Nm 105 in.lb
Shear strength (steel collar & pin)	17 MPa 2500 psi
Coefficient of thermal expansion	90 x 10 ⁻⁶ mm/mm/°C
Dielectric strength	11 kV/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.

A1044 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

Immersion (1,000 Hours)	Temperature (°C)	Strength Retention (%)
Engine Oil	125	100
Water/Glycol	75	93
Leaded Petrol	23	100
Unleaded Petrol	23	100
Diesel	23	98
Brake Fluid	23	95
99% IMS	23	95
Acetone	23	60

This product is not recommended for use in contact with oxygen, oxygen rich systems and other strong oxidizing materials. This product may adversely affect some thermoplastics and users must check compatibility of the product with such substrates before using.

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 continuous bead circumferentially 1-2 threads from the leading edge.
- 2) Ensure sufficient is applied to give a complete seal.
- 3) For taper/parallel threads ensure adhesive is positioned where the threads will engage fully. Gaps, and therefore cure times, may be greater than expected with this joint configuration.
- 4) Tighten with normal tools.

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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