

Permabond[®] *Adhesives for* *Maintenance, Repair* *& Overhaul*



Permabond[®]

Engineering Adhesives

www.permabond.com





Bonding & Repair Jobs








Cyanoacrylate "super glue" adhesives are an ideal way to quickly and effectively bond and repair parts. They only take seconds to cure to handling strength, do not require any sort of mixing and they will bond most substrate materials.

They should not be used in gaps larger than 0.5mm and are not suitable for spreading over a large area.

Adhesive Selection - Cyanoacrylate

Feature	General purpose for bonding plastic, metal and rubber. WRAS approved	For difficult to bond plastics and rubbers. WRAS approved	Rubber-toughened, high impact resistance. Black	Ultra-rapid cure, ideal for difficult surfaces
Product	102 	105 	737 	792 
Shear strength (steel)	19-23 MPa	18-22 MPa	19-23 MPa	18-22 MPa
Handling time* / full strength	10-15 secs / 24 hours	10-15 secs / 24 hours	15-20 secs / 24 hours	2-3 secs / 24 hours
Packaging	3g tube 20g bottle 50g bottle 500g bottle	20g bottle 50g bottle 500g bottle	20g bottle 50g bottle 500g bottle	20g bottle 50g bottle 500g bottle

Feature	Very high strength metal-bonder	Low-odour, non-blooming - ideal for dark surfaces	Non-drip instant cyanoacrylate gel. Ideal for vertical applications	Activator for non-active surfaces / to speed up cure	Polyolefin Primer for PP, PE, PTFE, Silicone rubber
Product	910 	947 	2011 	CSA Activator 	POP Primer 
Shear strength (steel)	23-29 MPa	16-20 MPa	20-24 MPa	Use in conjunction with any cyanoacrylate adhesive	
Handling time* / full strength	10-15 secs / 24 hours	10-15 secs / 24 hours	5-10 secs / 24 hours		
Packaging	20g bottle 50g bottle 500g bottle	20g bottle 50g bottle 500g bottle	20g tube 300g cartridge	200ml aerosol spray 1 litre bulk liquid	50ml bottle 1 litre bottle

*Tested at 23°C on mild steel.

Cyanoacrylate Directions for use



Protective gloves are recommended



Abrade with wet and dry grit paper



Degrease with solvent



Do not use too much cyanoacrylate, it will not cure



Use sparingly (apply only a small amount)



Assemble parts



Clamp together until parts reach handling time

Bonding & Repair Jobs

For ultimate high-strength bonding performance, rapid cure and excellent durability, look no further than Permabond TA4246 structural acrylic adhesive. The product comes with a separate brush on initiator and bonds wood, most plastics, composites, metals, ceramics and many other materials.



TA4246 Usage Instructions



Protective gloves are recommended



Abrade with wet and dry grit paper



Degrease with solvent



Brush on Initiator



Cut end of cartridge off to open



Dispense bead of adhesive, do not spread






Assemble parts ASAP



Clamp firmly for at least handling time, if possible, longer

Adhesive Selection

Feature	Rapid bonding for wood, most plastics, composites, concrete, metal	Flexible, transparent, longer cure time	Rapid bonding of most materials in convenient no-mix packaging (no need for gun or nozzles)
Product	<p>ET500</p> 	<p>ET515</p> 	<p>TA4246</p> 
Shear strength (steel)	12-18 MPa	8-12 MPa	33-35 MPa
Handling time / full strength*	5-8 mins / 24 hours	20-30 mins / 72 hours	2-4 mins / 24 hours
Chemistry	2-part room temperature cure epoxy	2-part room temperature cure epoxy	2-part, no mix room temperature cure structural acrylic
Packaging	<p>25 ml dual syringe 50ml dual cartridge 200ml cartridge 400ml cartridge</p>	<p>50ml cartridge 200ml cartridge 400ml cartridge</p>	<p>TA4246/Initiator 46 kit (1x65ml resin, 1x10ml initiator) TA4246 10x310ml (use with Initiator 46) TA4246 1 x 2kg (use with Initiator 46)</p>

*Tested at 23°C on mild steel.

ET500 & ET515 Directions for use



Protective gloves are recommended



Abrade with wet and dry grit paper



Degrease with solvent



For 50ml dual cartridge, use nozzle and gun to dispense



Apply adhesive as a continuous bead



Assemble parts



Clamp together until handling time is reached

Threadlocking







Locking of threaded fasteners

- Prevents vibration loosening
- Stops rust and corrosion - makes maintenance easier
- Nuts and bolts can be re-used
- Seals threads - prevents leaks
- Lubricates threads - making assembly much easier
- Reduces risk of cross-threading during assembly
- Can be used on a variety of fastener sizes - reduced inventory
- Quick and easy to apply
- High-strength threadlockers help prevent theft / vandalism

Using adhesive threadlocking compounds helps to prevent:

- Damage to expensive equipment
- Production line down time - idle staff and associated costs
- Damaged goods, waste
- Potential injury
- Faulty or poor quality products - damage to brand

Adhesive Selection

Feature	Easy to undo	Rapid cure, dismantlable	General purpose, dismantlable	Ideal for oily surfaces	High temperature resistance	Penetrating for pre-assembled parts
Product	A011 	A1042 	A113 	HM129 	HH131 	A126 
Maximum Fastener Size	M20 ¾"	M20 ¾"	M20 ¾"	M20 ¾"	M56 2"	M10 ½"
Strength	Low	Medium	Medium	High	High	High
Handling Time / full strength*	15 mins / 24 hours	5 mins / 24 hours	15 mins / 24 hours	10 mins / 24 hours	15 mins / 24 hours	15 mins / 24 hours
Breakaway / Prevail Torque (Nm)	4/5	16/8	12/7	33/58	27/54	14/34
Maximum Temperature (°C)	150	150	150	150	230	150
Approvals	WRAS	WRAS	WRAS		DVGW	
Packaging	50ml bottle 200ml bottle	10ml bottle 50ml bottle 200ml bottle	10ml bottle 50ml bottle 200ml bottle	50ml bottle 200ml bottle	10ml bottle 50ml bottle 200ml bottle	10ml bottle 50ml bottle 200ml bottle

*Tested at 23°C on mild steel

For faster cure, surface activator PermaBond A905 can be used. This is also suitable for treating inactive or passive surfaces such as stainless steel and certain plastics.

Directions for use



Protective gloves are recommended

Abrade & degrease with solvent

Snip tip off nozzle

Apply adhesive, take care not to contaminate nozzle

Adhesive should be applied where there is maximum contact

Screw nut onto bolt

Replace lid

Pipe Threadsealing

Sealing of threaded pipe joints

- Lubricates threads - making assembly much easier
- Reduces risk of cross-threading during assembly
- Stops rust and corrosion - makes maintenance easier
- Will not creep, shrink or shred - will not block valves
- Taps and valves can be easily aligned in pipework system
- Use instead of PTFE tape or pipe dope
- Pipe joints can be re-used
- Quick and easy to apply
- Can be used on a variety of pipe sizes



Directions for use



Protective gloves are recommended



Abrade & degrease with solvent



Snip tip off nozzle



Apply adhesive to leading edge



Assemble pipe








Tighten with normal tools



Replace lid

Adhesive Selection

Feature	For coarse threads	Low strength, easy to dismantle	High strength, excellent chemical resistance	Very low strength paste for coarse threads	General purpose, oxygen approval
Product	A129 	A131 	A1044 	A1058 	MH052 
Maximum Pipe Diameter	M56 2"	M56 2"	M56 2"	M56 2"	M56 2"
Pressure Sealing	Seal to burst rating of pipe				
Strength	Medium	Low	High	Low	High
Handling Time / full strength*	15 mins / 24 hours	45 mins / 24 hours	15 mins / 24 hours	90 mins / 72 hours	15 mins / 24 hours
Breakaway / Prevail Torque (Nm)	12/7	10/7	20/10	8/6	20/11
Maximum Temperature (°C)	150	150	150	150	150
Approvals		WRAS Potable Water, KIWA	WRAS Potable Water, Australian Gas	WRAS Potable Water	WRAS Potable Water, DVGW, BAM Oxygen
Packaging	200ml bottle	50ml bottle 200ml bottle	50ml bottle 200ml bottle	250ml tube	75ml bottle 200ml bottle 300ml cartridge

*Tested at 23°C on mild steel

Using adhesive threadsealing compounds helps to prevent

- Flood damage & contamination
- Production line down time
- Clean up costs
- Personal injury
- Risk of fire / explosion

For faster cure, surface activator PermaBond A905 can be used. This is also suitable for treating inactive or passive surfaces (such as aluminium, zinc, titanium, chrome, black oxide & others).

Gasketing

Sealing of flanges



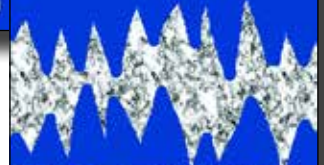
Paper Gasket



Surface roughness
maximum 1.6µm (Ra)

Liquid gasket makers
fill all voids on metal
surfaces and reduce
the requirement of fine
machining flanges





Permabond Gasket



Surface roughness
maximum 3.2 µm (Ra)

- Use instead of pre-cut gaskets
- One bottle for all gaskets = reduced inventory
- Vibration proof – will not loosen over time
- No “bedding in” compression relaxation – no servicing required
- Better stress distribution
- Easy to apply
- Will not degrade - no loose particles to block valves
- Will not creep or shrink
- Parts can be disassembled easily
- 100% metal to metal contact, adhesive fills all voids and creates a much better seal

Adhesive Selection

Feature	General purpose, WRAS approved	Flexible, low strength, easy to remove	High strength, flexible, high temperature resistance	High strength, rigid, high temperature resistance
Product	A136 	LH197 	MH196 	MH199 
Instant pressure sealing	Good	Good	Excellent	Excellent
Strength	Medium	Low	High	High
Handling Time / full strength*	<30 mins / 24 hours	20 mins / 24 hours	15 mins / 24 hours	20 mins / 24 hours
Maximum Temperature (°C)	150	150	200	200
Packaging	50ml bottle 200ml bottle 300ml cartridge	75ml bottle 300ml cartridge	75ml bottle 300ml cartridge	75ml bottle 300ml cartridge

*Tested at 23°C on mild steel. A905 surface activator can be used to speed up cure or activate passive surfaces such as stainless steel or certain plastics.

Directions for use



Protective gloves are recommended



Clean off rust and debris with a wire brush



Abrade & degrease with solvent



Snip tip off nozzle



Apply adhesive as a continuous bead, encircle bolt holes



Replace lid









To remove, prise apart and clean with wire brush

Retaining *Securing Cylindrical Assemblies*



- Replaces keyways, splines, expensive & time consuming fine machining for shrink or press fits
- Vibration proof – will not loosen over time
- 100% metal to metal contact for better stress distribution
- Protects against metal fretting & corrosion
- Single part – no mixing required, easy clean up
- Ability to bond dissimilar metals, fast assembly
- Parts can be re-used and are undamaged
- Easy to apply
- No design change – standard parts can be used
- Machining tolerances can be relaxed = lower cost

Adhesive Selection

Feature	Penetrating for pre-assembled parts	Low viscosity general purpose	Medium viscosity, toughened, rapid cure	High viscosity, rubber toughened	High temperature resistance	Silver-coloured metal repair paste
Product	A126 	A118 	A1046 	F202 	HM165 	HH167 
Maximum Gap Fill	0.05mm	0.12mm	0.25mm	0.5mm	0.3mm	0.5mm
Handling Time / full strength*	15 mins / 24 hours	15 mins / 24 hours	5-10 mins / 24 hours	15 mins / 24 hours	15-20 mins / 24 hours	15 mins / 24 hours
Shear Strength	10-20 MPa	21 MPa	25 MPa	30 MPa	20 MPa	32 MPa
Breakaway / Prevail Torque (Nm)	14/34	33/58	30/50	28/30	35/50	45/32
Maximum Temperature (°C)	150	150	150	100	230	150
Approvals		WRAS	DVGW	WRAS		
Packaging	50ml bottle 200ml bottle	10ml bottle 50ml bottle 200ml bottle	50ml bottle 200ml bottle	50ml bottle 200ml bottle	50ml bottle 200ml bottle	10 ml bottle 75ml bottle 300ml cartridge

*Tested at 23°C on mild steel

For faster cure, surface activator PermaBond A905 can be used. This is also suitable for treating inactive or passive surfaces such as stainless steel or certain plastics.

Directions for use

1



Protective gloves are recommended

2



Clean off rust and debris with a wire brush

3



Abrade & degrease with solvent

4



Snip tip off nozzle

5



Apply adhesive, avoid getting in bearing

6



Replace lid



Permabond's history of developing and manufacturing engineering adhesives spans **five decades** and three continents. Today, Permabond Engineering Adhesives Ltd (Europe & Asia) and Permabond LLC (Americas) provide technological solutions to engineers all over the world, with offices and facilities in America, Asia and Europe, backed by a high-tech **ISO 9001:2015** certified production plant in Europe.

- **Technical** – Our chemists and technicians are available to provide application assistance, custom formulation, in-house prototype testing, joint product development programs and much more.

- **Training** – Permabond's knowledgeable sales group will provide your staff with the information they need to maximize the efficiencies, cost savings, and safety benefits Permabond products generate.



- **Sales** – From preliminary project appraisals and product needs assessments through to process reliability analysis, Permabond's knowledgeable sales group will support you from product concept through to production.

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