Permabond®

Transport Industry Adhesives & Sealants

ISO 9001 Certified
"Our Science ... Your Success"

Planes, trains, and automobiles all require adhesives for a broad range of bonding applications. In many cases, welding, brazing, and mechanical fasteners are simply not suitable. Planes use many lightweight composites which cannot be welded and using bulky mechanical fasteners would add to component weight, making the use of adhesives in the aviation industry widespread. Trains and buses are adopting similar lightweight materials in a bid to increase fuel efficiency of vehicles and of course looking to similar joining techniques. Adhesives are vital for locking nuts and bolts together to prevent vibration loosening. They also help prevent parts seizing due to corrosion, making it easy to disassemble for repair or maintenance.

Permabond adhesives are specified worldwide for use in the manufacture, repair, and maintenance of airplanes, trains, and buses.

Permabond® Adhesives are used on exterior panels and mirrors, under the hood and on the interior. Typical applications include:

- Panel bonding - Various products with no read through
- Gearbox & Transmission
  - FIP Gaskets for cover - no bedding in, one adhesive can make any shaped gasket
  - High strength adhesives for bonding gears to shaft
  - Threadlockers - to prevent vibration loosening
  - Bearing fit adhesives
- Drive Shaft and Axles
  - Driveshaft and axle bonding with high strength toughened adhesives.
  - Bonding bearing into housings and yokes
  - Threadlocking bolts
  - Sealing hubs
  - Retaining shafts and splines
- Interior
  - Air vents
  - Passenger reading light fascia
  - Bus bellows (compartment dividers)
  - Tray table edging
  - Floor panels and treads
  - Emergency floor lighting
  - Bus Blinds
  - Handrails

Ideal for bonding:

- ***ABS***
- ***Acrylic***
- ***Aluminium***
- ***Carbon Fibre***
- ***Composite***
- ***EPDM***
- ***Ferrite***
- ***FRP & GRP***
- ***Glass***
- ***Laminate***
- ***Leather***
- ***Nylon***
- ***Phenolic***
- ***Polycarbonate***
- ***Polyethylene****
- ***Polypropylene****
- ***Polystyrene***
- ***PVC***
- ***Rubber***
- ***Steel***
- ***Titanium***
- ***Zinc***

+Many more materials

**Specific grades only*

Permabond® Engineering Adhesives

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Product Data

Example Application	Product	Features	Cure Method	Viscosity (mPa.s) cP	Gap Fill (mm) in	Handling Time	Max. Shear Strength Steel (MPa) psi
Exterior panels / skins Interior composite panelling	TA4210*	Toughened, gap filling, low shrinkage, 1:1 mix ratio, easy to apply	2-part pre-mix acrylic (cartridge and mixing nozzle system) room temperature cure	45,000	(4.0) 0.16	20-25 minutes	(25) 3,600
	TA4810**			50,000	(2.0) 0.08	10-15 minutes	(28) 4,000
	MS359 Series	Very flexible, low shrinkage and low read through, available in Non-sag and Self-levelling grades	1-part MS polymer, moisture cure at 4mm/24 hour	Various	(5.0) 0.2	15 min skin over time	3 (430)
	MT3821	Soft flexible, 2:1 mixable faster cure than MS359, non-slump	2-part modified epoxy	Thixotropic Paste	(5.0) 0.2	60 - 90 minutes	7 (1,000)
	PT328	Resilient, non-slump	2-part urethane	5,000	(5.0) 0.2	60 - 90 minutes	20 (2,900)
Gasketing - engine and gearbox	MH196	High temperature resistant, can form gaskets in all shapes and sizes	Single part anaerobic, cures at room temperature in the presence of metal and in the exclusion of oxygen	2rpm: 500,000 20rpm: 100,000	(0.5) 0.02	15 minutes (on steel)	(10) 1,450
Fixing bearings, shafts & splines	HM162	High strength, high temperature resistance, rapid cure	Single part anaerobic, cures at room temperature in the presence of metal and in the exclusion of oxygen	1,000	(0.2) 0.008	5 minutes (on steel)	(30) 4,300
Sealing pipework, heating etc	MH052	Suitable for sealing against fuel, autogas, water, oxygen	Single part anaerobic, cures at room temperature in the presence of metal and in the exclusion of oxygen	2rpm: 65,000 20rpm: 25,000	(0.5) 0.02	15 minutes (on steel)	(10) 1,450
Heat exchanger sealing	ES558	Wicking to penetrate around tubes and fins, metallic appearance	Single part heat cure epoxy	200,000 Flows like solder when heated	(0.5) 0.02	NA Cure 1 hour 150°C/300°F	(41) 6,000
Bonding seat trays, side (wing) mirrors	ET515	Toughened, flexible, rapid curing, clear epoxy with high peel strength	2-part pre-mix epoxy (cartridge and mixing nozzle system), room temperature cure	17,000	(2.0) 0.08	20-30 minutes	(12) 1,740
Bonding interior trim, blinds, fascia	2011	Non-drip, rapid curing, high strength surface insensitive gel	No mix, moisture cure cyanoacrylate	Gel	(0.5) 0.02	5-10 seconds (on plastic)	(24) 3,500
Bonding interior handrails	HM165	High performance, high strength, rapid curing	Single part anaerobic, cures at room temperature in the presence of metal and in the exclusion of oxygen	2rpm: 25,000 20rpm: 10,000	(0.3) 0.012	15-20 minutes (on steel)	(26) 3,800

If you can't see the exact product you are looking for, or need more in depth technical information, Permabond's technical team would be more than happy to help.

****Available Europe, Middle East, and Australia***
*****Available in The Americas and Asia***

Contact Permabond

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Distributor Stamp