# Permabond®
## Aerospace Adhesive Solutions

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

Permabond offers a range of adhesive technologies suitable for bonding a wide variety of substrate materials. Adhesive use is widespread both inside aircraft and out; for fixtures and fittings as well as mechanical and structural applications.
Adhesives are ideal for aircraft as they reduce the need for mechanical fasteners (which add to the aircraft weight) and allow greater freedom of substrate material choice. Adhesive bonding is also an effective alternative to welding - giving a better finished appearance, better strength performance, stress distribution, and avoiding the process of welding which can reduce the intrinsic strength of the metal structure.

### *Permabond® Adhesive Features & Benefits*

- Many Permabond grades meet ASTM standards and specific aviation approvals
- Permabond offers a wide range of technologies available to suit application requirements
- Adhesives available with resistance to harsh environments, elevated temperatures, and aggressive chemicals
- Permabond adhesives are solvent-free and developed to reduce workplace hazard
- Adhesives offer a lightweight and reliable alternative to welding. They also allow greater freedom of use of dissimilar materials and offer better stress distribution
- Bonded joints can help keep assemblies lightweight and rattle-free as well as more aesthetically pleasing than mechanical fasteners
- High peel strength, elongation, and flexibility allow bonding of thin, flexible panels or dissimilar materials with reduced chance of thermal shock cracking
- Low shrinkage and low exotherm for minimising show-through or distortion of fragile component parts.
- Wide scope of applications covered including: structural, cosmetic, interior fittings, maintenance, repair and overhaul, electronics, electronic components, and wiring applications

*Ideal for bonding:*

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

*+Many more materials*
**Specific grades only*

Permabond® Engineering Adhesives

# Permabond Adhesives for Aerospace

Here is a small selection of our most popular adhesive grades suitable for use in a range of aerospace applications. If you can't see exactly what you require, please contact our technical advisors with information about your application and your particular requirements and we will make a recommendation. The Permabond team provides support through the design phase, sample trials and production line integration. Whether you require technical support, custom formulations, or small batch production, please contact us.

## Aerospace Adhesive Product Data

| Typical Application | Features | Cure Method | Viscosity (mPa.s) cP | Gap Fill (mm) in | Handling Time (on Steel) | Temperature Range (°C) °F | Availability |
|---|---|---|---|---|---|---|---|
| Bonding aircraft seat trays | **Permabond ET515** 2-part epoxy with flexibility, excellent impact and vibration resistance | Epoxy - 2-part 1:1 mix ratio, room temperature cure | 17,000 | (2.0) 0.08 | 20-30 min. | (-55 to +100) -65 to +215 | *Worldwide* |
| Aluminum bonding. Seat construction, composite panel bonding/repair, honeycomb bonding, frame bonding. | **Permabond ET5422** 2-part blue epoxy with high shear and peel strength. | 2-part 2:1 by volume, room temperature or heat cure | Thixotropic paste | (5.0) 0.2 | 16 hours @ 23°C | (-40 to +120) -40 to +250 | *Worldwide* |
| Locking of nuts and bolts throughout the aircraft | **Permabond A113** Anaerobic threadlocking adhesive - prevents vibration loosening | Anaerobic - no mix, cures in contact with metal surfaces in a tightly fitting gap. | 500 | (0.12) 0.005 | 15 min. | (-55 to +150) -65 to +300 | *Europe, Asia, Australia* |
| | **Permabond MM115** Anaerobic threadlocking adhesive - prevents vibration loosening | | 1,300 Thixo | (0.15) 0.006 | 10 min. | (-55 to +150) -65 to +300 | *Americas & Asia* |
| Repairing damaged interior trim, sign bonding, small repair jobs | **Permabond 102** General purpose cyanoacrylate adhesive. Meets Boeing Specification | Cyanoacrylate - no mix, room temperature moisture cure | 70-90 | (0.15) 0.006 | 10-15 sec. | (-55 to +80) -65 to +180 | *Worldwide* |
| Aircraft wing spar bonding | **Permabond 910** Rapid curing methyl cyanoacrylate. Meets Boeing Specification | Cyanoacrylate - no mix, room temperature moisture cure | 70-90 | (0.15) 0.006 | 10-15 sec. | (-55 to +90) -65 to +195 | *Worldwide* |
| Bonding overhead cabin lockers | **Permabond TA4210** Structural acrylic, excellent impact and vibration resistance. Rapid strength development minimises clamping time | Structural acrylic - 2-part 1:1 mix ratio, room temperature cure | 45,000 | (4.0) 0.16 | 30-35 min. | (-40 to +120) -40 to +250 | *Europe, Asia, Australia* |
| | **Permabond TA4810** Structural acrylic, excellent impact and vibration resistance. Rapid strength development minimizes clamping time | | 175,000 | (2.0) 0.08 | 20-30 min. | (-40 to +120) -40 to +250 | *Americas & Asia* |
| Bonding brackets to hold wiring | **Permabond TA4246** Structural acrylic, excellent impact and vibration resistance. | Structural acrylic - resin & brush on initiator, room temperature cure | 28,000 | (0.5) 0.02 | 2-4 min. | (-40 to +120) -40 to +250 | *Worldwide* |

*For full, up-to-date technical information, please refer to the TDS (Technical Data Sheet).*


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Distributor Stamp