Permabond offers a range of adhesive technologies suitable for use in shipbuilding, repair, and maintenance. Example applications include:

- Permabond adhesives are ideal for bonding gears to shafts, repairing and replacing spun bearings, bonding bushings and sealing and gasketing gear box housings.
- Permabond structural grade adhesives and metal plates are used to strengthen areas with stress cracks resulting from environmental and operational conditions.
- Permabond anaerobic FIP gaskets (form in place) are used to seal flanges and bolt holes on a ship’s heat exchanger.
- Permabond retaining compounds offer an excellent alternative to welding or brazing. Gap filling and strong bonds in one step allows for relaxed tolerances of machined parts.

**Permabond® Adhesive and Sealant Features & Benefits**

**Benefits of Permabond anaerobic adhesives and sealants:**

- Available in a range of viscosities to suit component size, diameter, and fit
- Prevent corrosion, metal fretting, vibration loosening.
- Machining tolerances can be relaxed (no more interference or shrink fits)
- Help lubricate parts making the assembly process much easier
- Permabond gasketmakers are ideal for making a whole variety of different shaped gaskets
- Excellent resistance to water, oil, petrol and other chemicals.
- High temperature resistant products also available.

**Benefits of Permabond adhesives and sealants over welding or brazing**

- Less skill involved - no need for a trained welder
- Reduced workplace hazards - no oxy-acetylene needed
- No pin prick weld holes; improved sealing
- More choice in terms of using dissimilar materials
- Adhesives available with metallic colour to give a good aesthetic appearance
- Reduced costs

Permabond offers a range of adhesive technologies suitable for use in shipbuilding, repair, and maintenance. Example applications include:

- Permabond adhesives are ideal for bonding gears to shafts, repairing and replacing spun bearings, bonding bushings and sealing and gasketing gear box housings.
- Permabond structural grade adhesives and metal plates are used to strengthen areas with stress cracks resulting from environmental and operational conditions.
- Permabond anaerobic FIP gaskets (form in place) are used to seal flanges and bolt holes on a ship’s heat exchanger.
- Permabond retaining compounds offer an excellent alternative to welding or brazing. Gap filling and strong bonds in one step allows for relaxed tolerances of machined parts.

**Permabond® Adhesive and Sealant Features & Benefits**

**Benefits of Permabond anaerobic adhesives and sealants:**

- Available in a range of viscosities to suit component size, diameter, and fit
- Prevent corrosion, metal fretting, vibration loosening.
- Machining tolerances can be relaxed (no more interference or shrink fits)
- Help lubricate parts making the assembly process much easier
- Permabond gasketmakers are ideal for making a whole variety of different shaped gaskets
- Excellent resistance to water, oil, petrol and other chemicals.
- High temperature resistant products also available.

**Benefits of Permabond adhesives and sealants over welding or brazing**

- Less skill involved - no need for a trained welder
- Reduced workplace hazards - no oxy-acetylene needed
- No pin prick weld holes; improved sealing
- More choice in terms of using dissimilar materials
- Adhesives available with metallic colour to give a good aesthetic appearance
- Reduced costs

**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*
<table>
<thead>
<tr>
<th>Features</th>
<th>Typical Applications</th>
<th>Cure method</th>
<th>Viscosity (mPa.s) / cP</th>
<th>Gap fill (mm) in</th>
<th>Max. shear strength steel (MPa) / psi</th>
<th>Temperature range (°C) / °F</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permabond A1042</td>
<td>Removable anaerobic threadlocker - prevents vibration loosening, corrosion, leakage</td>
<td>Threadlocking and sealing hydraulics</td>
<td>Anaerobic cure</td>
<td>2rpm: 8,000 20rpm: 1700</td>
<td>(0.12) 0.005</td>
<td>(12) 1,700</td>
<td>-55 to +150 -65 to +300</td>
</tr>
<tr>
<td>Permabond MM115</td>
<td>Removable anaerobic threadlocker - prevents vibration loosening, corrosion, leakage</td>
<td>Threadlocking</td>
<td>Anaerobic cure</td>
<td>1,300</td>
<td>(0.15) 0.006</td>
<td>(10) 1,500</td>
<td>-55 to +150 -65 to +300</td>
</tr>
<tr>
<td>Permabond LM012</td>
<td>Hydraulic grade - no fillers</td>
<td>Sealing hydraulic connections</td>
<td>Anaerobic cure</td>
<td>2,000</td>
<td>(0.2) 0.008</td>
<td>(5) 750</td>
<td>-55 to +175 -65 to +350</td>
</tr>
<tr>
<td>Permabond HM129</td>
<td>Permanent anaerobic threadlocker - can be used on oily / contaminated parts</td>
<td>Threadlocking nuts and bolts</td>
<td>Anaerobic cure</td>
<td>500</td>
<td>(0.15) 0.006</td>
<td>(17) 2,500</td>
<td>-55 to +150 -65 to +300</td>
</tr>
<tr>
<td>Permabond MH196</td>
<td>High viscosity anaerobic sealant for making formed-in-situ gaskets and for sealing flanges and bolt holes</td>
<td>Gasketing and flange sealing</td>
<td>Anaerobic cure</td>
<td>2rpm: 500,000 20rpm: 100,000</td>
<td>(0.5) 0.02</td>
<td>(10) 1,450</td>
<td>-55 to +200 -65 to +392</td>
</tr>
<tr>
<td>Permabond A131</td>
<td>Thread sealant - suitable for sealing fuel, water, sprinkler, and heating pipework</td>
<td>Thread sealing</td>
<td>Anaerobic cure</td>
<td>2rpm: 40,000 20rpm: 6,000</td>
<td>(0.5) 0.02</td>
<td>(6) 870</td>
<td>-55 to +150 -65 to +300</td>
</tr>
<tr>
<td>Permabond LH050</td>
<td>Thread sealant - suitable for sealing fuel, water, sprinkler, and heating pipework</td>
<td>Thread sealing</td>
<td>Anaerobic cure</td>
<td>250,000</td>
<td>(0.5) 0.02</td>
<td>(7) 1,000</td>
<td>-55 to +177 -65 to +350</td>
</tr>
<tr>
<td>Permabond A1046</td>
<td>Toughened, rapid curing high strength retaining adhesive</td>
<td>Bonding gears to shafts, bearings into housings. Also ideal for sealing air conditioning refrigerant pipework</td>
<td>Anaerobic cure</td>
<td>2rpm: 9,000 20rpm: 2,500</td>
<td>(0.25) 0.01</td>
<td>(25) 3,600</td>
<td>-55 to +150 -65 to +300</td>
</tr>
<tr>
<td>Permabond HM165</td>
<td>Toughened, rapid curing high strength retaining adhesive</td>
<td>Bonding gears to shafts, bearings into housings. Also ideal for sealing air conditioning refrigerant pipework</td>
<td>Anaerobic cure</td>
<td>2rpm: 25,000 20rpm: 10,000</td>
<td>(0.3) 0.012</td>
<td>(20) 2,900</td>
<td>-55 to +230 -65 to +446</td>
</tr>
<tr>
<td>Permabond A134</td>
<td>High viscosity retaining adhesive, suitable for bonding larger parts</td>
<td>Bonding gears to shafts, bearings into housings</td>
<td>Anaerobic cure</td>
<td>2rpm: 70,000 20rpm: 8,000</td>
<td>(0.5) 0.02</td>
<td>(21) 3,000</td>
<td>-55 to +150 -65 to +300</td>
</tr>
</tbody>
</table>

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. For full, up-to-date technical information, please refer to the TDS (Technical Data Sheet). See Bonding and Structural Adhesives on the following page!
## Marine Adhesives

<table>
<thead>
<tr>
<th>Features</th>
<th>Typical Applications</th>
<th>Cure method</th>
<th>Viscosity (mPa.s) cP</th>
<th>Gap fill (mm) in</th>
<th>Max shear strength steel (MPa psi)</th>
<th>Temperature range (°C °F)</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permabond 2011</td>
<td>General purpose instant bonding gel</td>
<td>Moisture cure Gel</td>
<td>(0.5)</td>
<td>0.02</td>
<td>(24) 3,500</td>
<td>(-55 to +120) -65 to +250</td>
<td>Worldwide</td>
</tr>
<tr>
<td>Permabond TA4200</td>
<td>Adhesive for structural bonding</td>
<td>Resin &amp; hardener</td>
<td>45,000</td>
<td>0.16</td>
<td>(25) 3,600</td>
<td>(-40 to +120) -40 to +250</td>
<td>Europe, Middle East, Australia</td>
</tr>
<tr>
<td>Permabond TA4810</td>
<td>Adhesive for structural bonding</td>
<td>Resin &amp; hardener</td>
<td>175,000</td>
<td>0.08</td>
<td>(28) 4,000</td>
<td>(-40 to +120) -40 to +250</td>
<td>Americas &amp; Asia</td>
</tr>
<tr>
<td>Permabond ET538</td>
<td>2-part epoxy for bonding of wood, fibre-glass, composites, metal etc. Excellent salt water resistance.</td>
<td>Resin &amp; hardener</td>
<td>Paste</td>
<td>(5)</td>
<td>(20) 2,900</td>
<td>(-40 to +100) -40 to +212</td>
<td>Worldwide</td>
</tr>
</tbody>
</table>

### 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.

---

### Contact Permabond

- **www.permabond.com**
- **US Helpline - 800-640-7599**
- **UK - 0800 975 9800**
- **Asia + 86 21 5773 4913**
- **General Enquiries +44(0)1962 711661**
- **Deutschland 0800 101 3177**
- **France 0805 111 388**
  - info.europe@permabond.com
  - info.americas@permabond.com
  - info.asia@permabond.com

---

The information given and the recommendations made herein are based on our experience and are believed to be accurate. No guarantee as to, or responsibility for, their accuracy can be given or accepted, however, and no statement herein is to be treated as a representation or warranty. In every case we urge and recommend that purchasers, before using any product, make their own tests to determine, to their own satisfaction, its suitability for their particular purposes under their own operating conditions. Always refer to current product technical datasheet for most recent and accurate technical information.

*Ind_Marine_2015_Global_ISO*