

Permabond®

Adhesives for Heat Exchangers

ISO 9001:2015 Certified
"Our Science ... Your Success"

Adhesives are a cost-effective solution for sealing heat exchanger tubes onto end-plates and are popular alternatives to welding or brazing. The result is a superior leak-free assembly.

Adhesives offer design engineers the opportunity to choose lightweight but durable non-metal substrates and to combine dissimilar materials without sacrificing performance requirements.

Permabond adhesives offer excellent resistance to oil, water, coolants, and gases. This makes them suitable for assembly and repair of all sizes of heat exchangers in a variety of industries, such as automotive, HVAC, and marine.

Permabond® Adhesive and Sealant Features & Benefits

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, plastics, and metals
- Adhesives available with metallic color 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

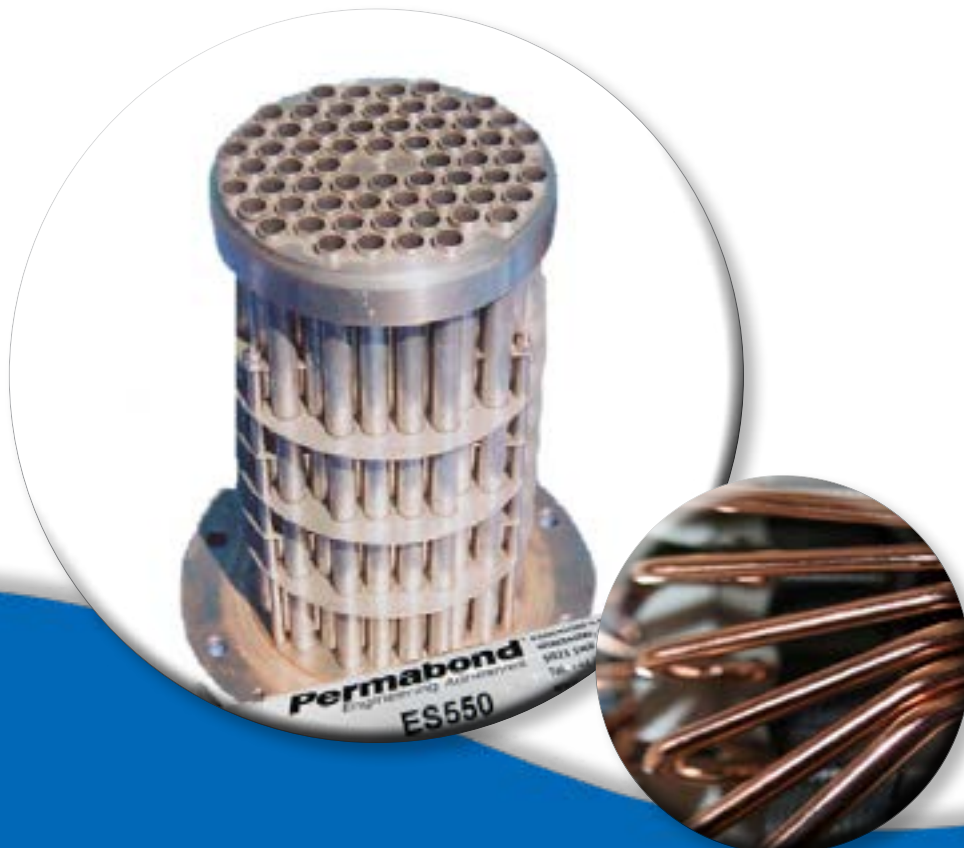
Steel

Titanium

Zinc

+Many more materials

*Specific grades only



Adhesives for Heat Exchangers

Here is a small selection of our most popular adhesive grades suitable for use in a range of heat exchanger 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.

Features	Typical Applications	Cure method	Viscosity (mPa.s) cP	Handling time	Max. shear strength steel (MPa) psi	Temperature range (°C) °F
Permabond UV7141 UV and anaerobic curing adhesive for bonding metals and other substrates.	Heat exchangers - for sealing around tubes.	UV light and Anaerobic - lack of oxygen, presence of metal	1,350	5 seconds	(17) 2,500	(-55 to +150) -65 to +300
Permabond ES558 Flows like solder when heated	Heat exchangers - for flowing and sealing around tubes	No mix, heat cure (oven) or induction	200,000	60 mins (full strength at 150°C / 300°F oven cure)	(41) 6,000	(-40 to +180) -40 to +350
Permabond ES550 Toughened epoxy, excellent chemical and temperature resistance	Heat exchangers - for creating fillets around the tubes / endplates. Bonding heat exchanger fins	No mix, heat cure (oven) or induction	1,500,000	60 mins (full strength at 150°C / 300°F oven cure)	(41) 6,000	(-40 to +180) -40 to +350
Permabond MT3809 Flexible epoxy - ideal for plastic and metal	Potting/sealing flutes in cooling devices	Two component room temperature cure	12,500	30 mins (full cure in ≥72 hours)	(8) 1,200	(-40 to +120) -40 to +250
Permabond MT382 Flexible epoxy - ideal for metal	Potting/sealing flutes in cooling devices	Two component room temperature cure	21,500	2 hours (full cure in ≥72 hours)	(7) 1,000	(-40 to +120) -40 to +250
Permabond HM161 Anaerobic curing adhesive. Use with Permabond ASC10 to cure the surface of the sealant	For sealing various components	Anaerobic	2,000	10 mins (full cure in 24 hours)	(24) 3,500	(-55 to +150) -65 to +300
Permabond 737 Cyanoacrylate Use with Permabond POP for EPDM or silicone gaskets	Bonding rubber gaskets.	Cyanoacrylate	3,000	<20 seconds (full cure in 24 hours)	(21) 3,000	(-55 to +120) -65 to +250

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. Permabond offers free custom development of sealants to suit your precise heat exchanger project requirements. Please contact us to discuss.

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



Distributor Stamp

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.