Permabond®
Engineering Adhesives

ADHESIVES FOR WIND ENERGY INDUSTRIES



Permabond products are relied upon to produce eco-friendly wind energy. Permabond manufactures a full line of adhesive chemistries that have been trusted in gear boxes and motors used in almost every industry for decades.

Permabond Engineering Adhesives works with engineers in virtually every industry to streamline production with energy saving adhesive processes. We will even custom formulate to meet exacting unique requirements.

Permabond has proudly helped industries save energy for over 50 years.

Now we are pleased to help you create it.

The performance and consistent quality of Permabond products have made them the products of choice for retaining, threadlocking, gasketing, tacking, potting, sealing, and magnet bonding as well as several structural applications.

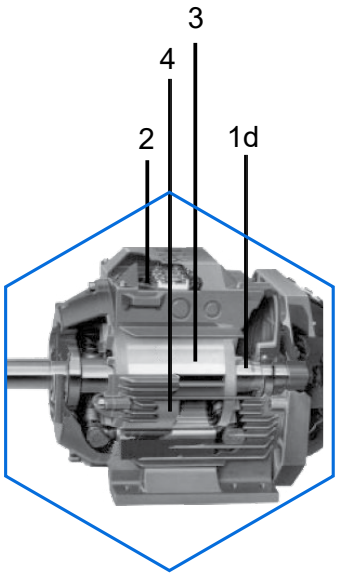


TYPICAL APPLICATIONS:

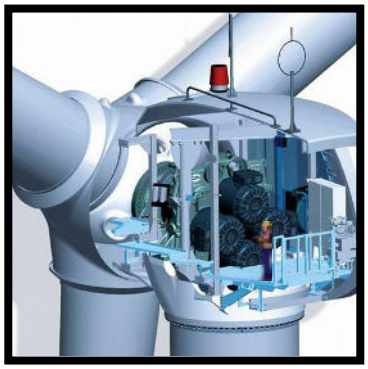
- Bonding
- Form in Place Gasketing
- Retaining
- Sealing
- Tamperproofing
- Threadlocking
- Thread sealing

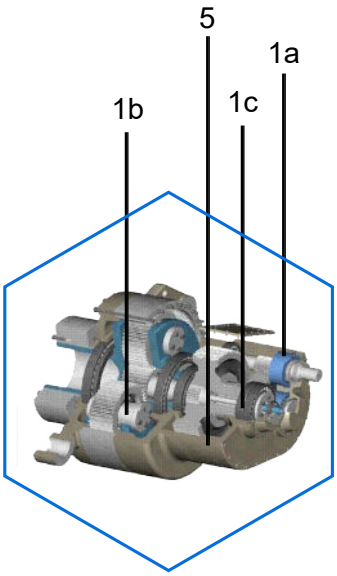
...and many more!

Sub Assemblies



Generator





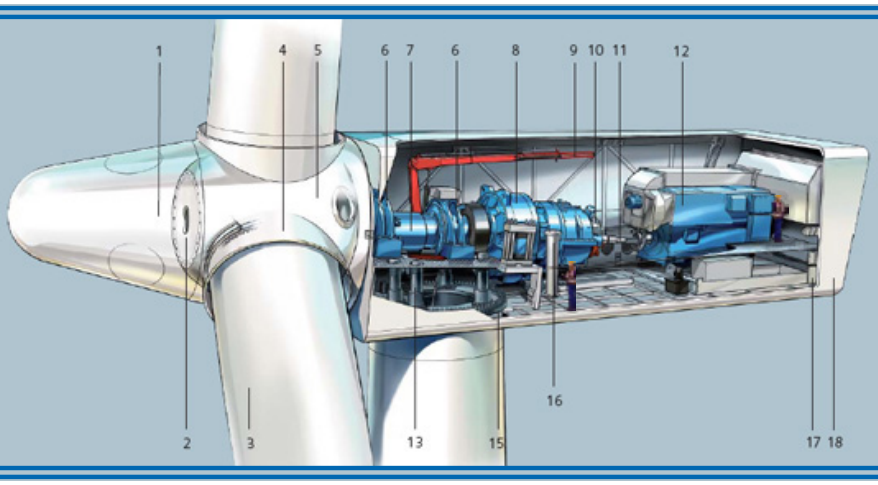
Gearbox

The products listed below meet the industry specific demands of wind energy applications, including; high strength anaerobic sealing compounds, structural acrylic motor magnet adhesives, and gap filling epoxies. For additional applications see the full product line at permabond.com or contact technical support for product recommendations or custom formulations.

	Application	Features & Benefits
Retaining - Anaerobic Retaining Compounds		
1a	Retaining High Speed Shaft Bearing	Permabond's high performance anaerobic formulations provide 100% surface-to-surface contact while mechanical joining techniques provide only 20% of surface-to-surface contact. The resulting surface area increase allows for a greater load carrying capacity, more than 5 times that of mechanical joining techniques. Anaerobic retaining compounds eliminate the need for heated joining processes providing more efficient processing. Product selection is based on gap fill required and temperature resistance needed.
1b	Retaining Planet Bearing	
1c	Retaining Intermediate Shaft Bearing	
1d	Retaining Rolling Bearings to Shaft	
Threadlocking		
Various	Locking Threads on All Fasteners	Locking fasteners prevent loosening due to vibration. Permanent, removable, high strength, and high temperature resistant grades are available in various viscosities to suit application requirements.
Gasketing		
Various	Flange Sealing	HH190 - High strength/high viscosity form in place gasket (Gasketmakers®) seals flanges. MH199 is high temperature resistant and very thixotropic. It is easily removed for maintenance or repair and is ideal for sealing housings.
5	Sealing Gear Box Housing	
Tacking, Potting, Sealing		
2	Wire Connection Sealing	Two part epoxies seal and support connections.
Various	Sealing Grommets	Cyanoacrylates bond/seal grommets. Permabond 102 & 712 are popular choices for better moisture and heat resistance.
2	Wire Tacking in Connection Box	Cyanoacrylates quickly tack wires. Choose Permabond 268 for high speed assembly or low odor, low bloom Permabond 947 for manual applications.
Motor Magnet Bonding		
3	Bonding Magnets to Rotor	Surface activated acrylics provide fast cure, efficient no mix process, high strength, and temperature resistance. Non-corrosive TA4590 is generally the product of choice.
4	Bonding Magnets to Stator	
Other Structural Bonds		
Various	Bonding Mounting Brackets	Mounting brackets, braces, and housings all require high strength durable bonds. Epoxies and Structural Acrylics are selected based on individual requirements.

Final Assembly

1. Spinner
2. Spinner bracket
3. Blade
4. Pitch bearing
5. Rotor hub
6. Main bearing
7. Main shaft
8. Gearbox
9. Service crane



10. Brake disc
11. Coupling
12. Generator
13. Yaw Gear
14. Tower
15. Yaw Ring
16. Oil Filter
17. Generator Fan
18. Canopy

Product	Application	Features & Benefits
HH190	Hub Mounting Disc / Rotor Locking Disc	Permabond HH190 is a purple, high viscosity, high strength, flange sealant that prevents corrosion. Permabond HH190 conforms to the shape of the flange allowing 100% surface-to-surface contact. It is non-shimming, resulting in uniform stress distribution, and eliminates the need for re-torquing. Permabond HH190 provides seal up to 5000psi with excellent vibration, chemical and shock resistance, and is removable with hand tools.
	Disc Brake Assembly Mounting Surface / Gear Box Case	
	Yaw Drive Motor / Yaw Wind Direction Control Gear	
	Impact Noise Insulation Mounts / Generator Mounting Frame	
	Yaw Drive Bearing / Yaw Gear	
MM115 / A1042*	Threaded fasteners / machinery within the canopy	Permabond MM115 is a blue, removable, general purpose threadlocker which prevents loosening due to vibration. Because MM115 prevents corrosion, removal is possible with ordinary tools and is often easier than removing fasteners without sealant.
	Threaded fasteners / support frame section of the Down Tower Assembly	
	Threaded fasteners / between the front and rear main frame structures	
ET540	Bonding blades	Permabond ET540 is a two component epoxy with a 2:1 mix ratio for ease of assembly. ET540 has excellent temperature and chemical resistance and forms high strength bonds with gap fill capabilities to 5mm.
HM162/ A118*	Friction Brake Units / Yaw Body	Permabond HM162 is a green, fast curing, high temperature resistant retaining compound that provides 100% surface-to-surface contact, increasing the joint load carrying capacity over 5 times that of mechanical joining methods.

*** MM115 & HM162 are available in The Americas and Asia - A1042 and A118 are available in Europe and ROW.**

PERMABOND.COM

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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.