

### Features & Benefits

- Eliminates pre-cut gaskets from flange assemblies
- Instant pressure seal
- Forms a tough, durable seal able to withstand high pressure
- No need to re-tighten flange bolts
- Non-flammable
- No shimming effects – better load transmission

### Description

Permabond® HH190 Gasketmaker is an anaerobic curing flange sealant that can replace, or be used as a dressing for, conventional pre-cut gaskets. Since HH190 is a flowable paste, it conforms to the shape of the flange. The consistency allows metal to metal contact of the flanges while filling the areas where no contact exists because of irregularities. HH190 results in uniform stress distribution and eliminates the need for re-torquing because of stress relaxation of the flange bolts. It provides instant seal depending on the gap and flange width and ultimately seals up to 5000psi. It has excellent shock and vibration resistance and is able to be conveniently dismantled if necessary.

### Physical Properties of Uncured Adhesive

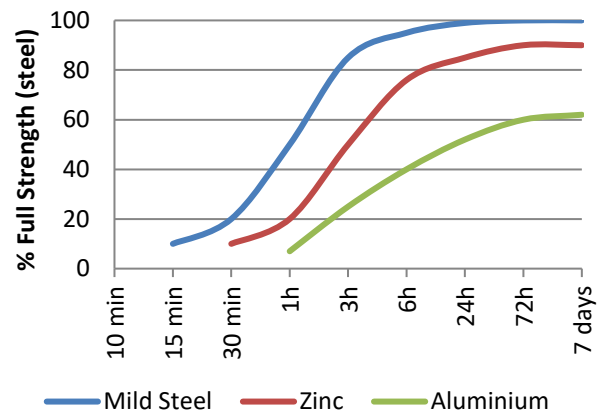
Chemical composition	Acrylic
Appearance	Purple
Viscosity @ 25°C	300,000 mPa.s (cP) Flowable Paste
Specific Gravity	1.1

### Typical Curing Properties

Maximum gap fill	0.3 mm <b>0.012 in</b>
Time taken to reach handling strength (M10 steel) @23°C	15 minutes*
Full strength (M10 steel) @23°C	24 hours

\*Handling time at 23°C / 73°F. Copper and its alloys will make the adhesive cure more quickly, while oxidised or passivated surfaces (like stainless steel) will reduce cure speed. To reduce curing time, use

### Strength Development



\*Cure times are typical at 23°C. Copper and its alloys will follow the faster cure while oxidised or passivated surfaces like stainless steel will tend towards the slower curve. Lower temperatures or large gaps will tend to extend the cure time. To reduce the cure time the use of Permabond A905, ASC10, or heat can be considered.

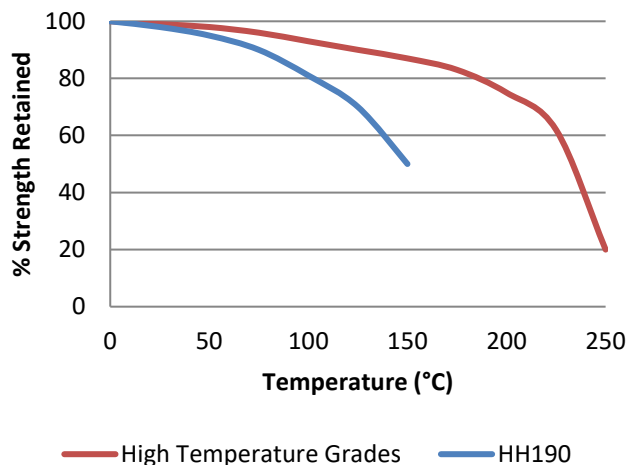
### Typical Performance of Cured Adhesive

Torque strength (M10 steel ISO10964)	Break 10 N·m <b>90 in.lb</b> Prevail 6 N·m <b>50 in.lb</b>
Shear strength (steel collar & pin ISO10123)	6 MPa <b>900 psi</b>
Coefficient of thermal expansion	90 x 10 <sup>-6</sup> mm/mm/°C
Dielectric strength	11 kV/mm
Thermal conductivity	0.19 W/(m.K)
Instant seal (5 mil gap)	>75 psi
Full seal (10 mil gap)	>5000 psi

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## Hot Strength



*"Hot strength" Breakaway strength on M10 Zinc plated bolts according to ISO 10964. Cured at 23°C for 24 hours then conditioned for 30 minutes at testing temperature.*

HH190 can withstand higher temperatures for brief periods (such as for paint baking and wave soldering processes) providing the joint is not unduly stressed. The minimum temperature the cured adhesive can be exposed to is -55°C (-65°F) depending on the materials being bonded.

## Chemical Resistance

340 Hour Immersion At 75°C (168°F)	Strength retained (%)
Water	100
Butyl alcohol	100
Toluene	99
Motor oil	99
Hydrocarbon test fluid	100
JP4-jet fuel	93
JP5-jet fuel	100
Ethylene glycol	99

*This product is not recommended for use in contact with oxygen, oxygen rich systems and other strong oxidizing materials. This product may adversely affect some thermoplastics and users must check compatibility of the product with such substrates before using.*

## Surface Preparation

Though the anaerobic adhesives will tolerate a slight degree of surface contamination, best results are obtained on clean, dry and grease free surfaces. The use of a suitable solvent-based cleaner (such as acetone or isopropanol) is recommended.

In general, roughened surfaces (~25µm) give higher bond strengths than polished or ground surfaces.

To reduce the curing time, especially on inactive surfaces (such as zinc, aluminium and stainless steel), the use of Permabond A905 or ASC10 can be considered.

## Directions for Use

- 1) Apply as a bead, by roller, silkscreen or stencil. Ensure all potential leak paths such as flange bolt holes are encircled.
- 2) Removal: use normal tools to lever the surfaces apart.
- 3) Ensure old adhesive is removed before reassembling the parts.

## Storage & Handling

Storage Temperature	5 to 25°C (41 to 77°F)
Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene. Full information can be obtained from the Safety Data Sheet.	

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