

### Features & Benefits

- Easy to apply
- High shear strength
- Fast setting
- Full cure at room temperature
- Sandable and paintable after a short period of time

### Description

**PERMABOND<sup>®</sup> ET5003** is a two-part, fast curing, thixotropic adhesive. It is primarily designed for repairing metal substrates. The controlled flow properties as well as its ease of mixing and application, enables the adhesive to be used where some gap filling is required.

### Physical Properties of Uncured Adhesive

	ET5003 A-side	ET5003 B-side
Chemical composition	Epoxy Resin	Mercaptan Hardener
Appearance	Silver-grey	Black
Viscosity @ 25°C	190,000 mPa.s (cP) Thixotropic	54,000 mPa.s (cP) Thixotropic
Specific gravity	1.4	1.5

### Typical Curing Properties

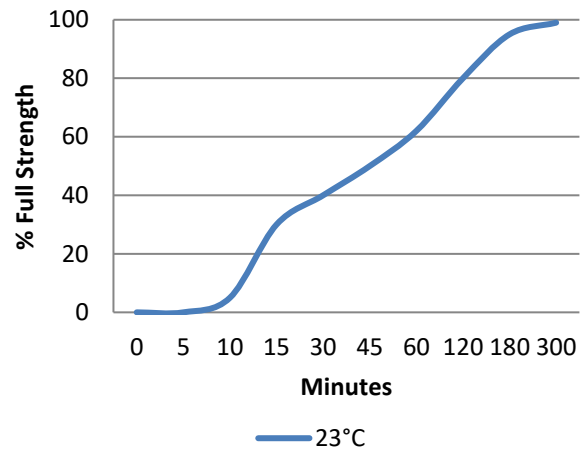
Mix ratio	1:1 by volume
Maximum gap fill	2 mm <b>0.08 in</b>
Gel time @23°C	20g: 5 mins
Handling Time	23°C: 12-15 mins
Working Strength	23°C: 30-60 mins
Full cure	23°C: 24 hours

### Typical Performance of Cured Adhesive

Shear strength* (ISO4587)	Mild Steel: 20-24 N/mm <sup>2</sup> <b>(2900-3480psi)</b> Aluminium: 16-19 N/mm <sup>2</sup> <b>(2320-2760psi)</b> Stainless Steel: 23-26 N/mm <sup>2</sup> <b>(3340-3770psi)</b>
Hardness (ISO868)	65 Shore D
Compressive strength (ASTM D695)	60 MPa

\*Strength results will vary depending on the level of surface preparation and gap.

### Strength Development

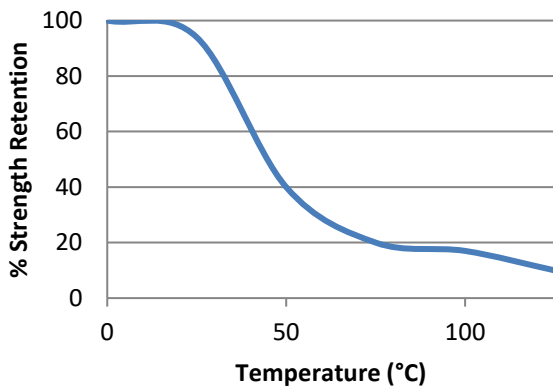


Graph shows typical strength development of bonded components. An increase of 8°C in temperature will halve the cure time. Lower temperatures will result in a slower cure time.

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## Hot Strength



"Hot strength" shear strength tests performed on mild steel. Fully cured specimens conditioned to pull temperature for 30 minutes before testing at temperature.

ET5003 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 -40°C (-40°F) depending on the materials being bonded.

## Additional Information

This product is not recommended for use in contact with strong oxidizing materials.

Information regarding the safe handling of this material may be obtained from the safety data sheet.

Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene.

**This Technical Datasheet (TDS) offers guideline information and does not constitute a specification.**

## Storage & Handling

Storage Temperature	5 to 25°C (41 to 77°F)
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## Surface Preparation

Surfaces should be clean, dry and grease-free before applying the adhesive. Use a suitable solvent (such as acetone or isopropanol) for the degreasing of surfaces. Some metals such as aluminium, copper and its alloys will benefit from light abrasion with emery cloth (or similar), to remove the oxide layer.

## Directions for Use

1. Surfaces must be clean, dry and grease-free prior to bonding. If using a cleaning solvent, allow 3-4 minutes to fully evaporate before applying adhesive.
2. Apply a thin bead of adhesive pre-mixed through a static mixer nozzle.
3. Join the parts. Parts must be joined within the usable pot life of mixing the two epoxy components.
4. Large quantities and/or higher temperature will decrease the usable life or pot life.
5. Apply pressure to the assembly by clamping until handling strength is obtained.
6. Full cure will be obtained after 24h at 23°C (74°F). Heat can be used to accelerate the curing process.

**NB. Exercise caution when mixing large quantities due to exothermic reaction.**

## Video Links

Surface preparation:

<https://youtu.be/8CMOMP7hXjU>



Two-part epoxy directions for use:

<https://youtu.be/GRX1RyknYqc>



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Permabond ET5003

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