

Features & Benefits

- Adhesion to a wide variety of substrates
- Full cure at room temperature
- Easy to apply
- Good impact strength
- Excellent adhesion to stainless steel

Description

PERMABOND® ET5390 is a thixotropic two-part epoxy adhesive with a soft paste consistency. When fully cured, ET5390 exhibits exceptional adhesion to a wide variety of materials including hard-to-bond substrates and stainless steel. It is easy to mix and apply - its controlled flow properties allow it to be used where gap filling is required.

Physical Properties of Uncured Adhesive

| | ET5390A | ET5390B |
|----------------------|--|---------------------------------|
| Chemical composition | Epoxy Resin | Polyamide |
| Appearance | Black paste | Black |
| Viscosity @ 23°C | 2rpm: 250,000-500,000 mPa.s (cP) 20rpm: 85,000-135,000 mPa.s (cP) | 20rpm: 30,000-50,000 mPa.s (cP) |
| Specific gravity | 1.5 | 1.3 |

Typical Curing Properties

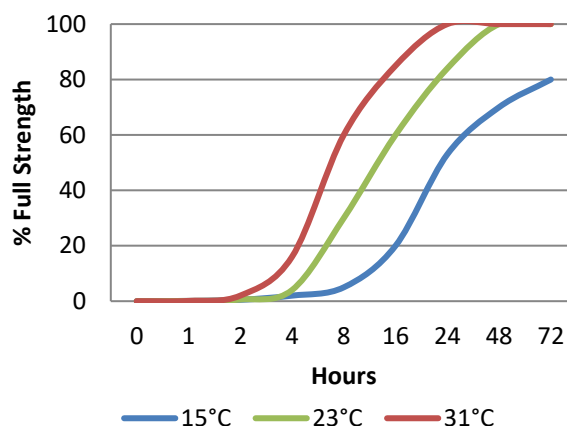
| | |
|-----------------------------------|--------------------------------------|
| Mix ratio | 1:1 by volume 100:90 by weight |
| Maximum gap fill | 3 mm 0.12 in |
| Usable / pot life @23°C 10g mixed | 2-4 hours |
| Handling time @23°C | 6-8 hours |
| Working strength @23°C | @ 23°C: 8-12 hours @ 60°C: 1 hour |
| Full cure @23°C | @ 23°C: 72 hours @ 60°C: 2 hours |

Typical Performance of Cured Adhesive

| | |
|---|---|
| Shear strength (mild steel)* (ISO4587) | Cured 72hrs @23°C: 17-19 N/mm ² (2500-2800 psi) Cured 2 hrs @ 60°C: 20-22 N/mm ² (2900-3200 psi) |
| Shear strength (stainless steel)* (ISO4587) | Cured 72 hrs @ 23°C As received: 17-21 N/mm ² (2500-3000 psi) Gritblast/degrease: 19-21 N/mm ² (2800-3000 psi) Cured 2 hrs @ 60°C As received: 18-22 N/mm ² (2600-3200 psi) Gritblast/degrease: 24-26 N/mm ² (3500-3800 psi) |
| Hardness (ISO868) | 75-80 Shore D |

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

Strength Development

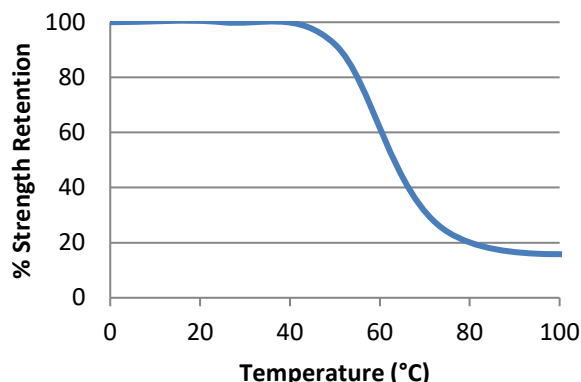


Graph shows typical strength development of bonded components. An increase of 8°C in temperature will halve the cure time. Lower temperatures will result in a slower cure time.

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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.

ET5390 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) |
|---------------------|------------------------|

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. Dual cartridges:
 - a) Insert the cartridge into the application gun and guide the plunger into the cartridge.
 - b) Remove the cartridge cap and dispense material until both sides are flowing.
 - c) Attach the static mixer to the end of the cartridge and begin dispensing the material.
2. Apply material to one of the substrates.
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 until handling strength is obtained.
6. Full cure will be obtained after 72 hours at 23°C (77°F). Heat can be used to accelerate the curing process.

Video Links

Surface preparation:

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



Two-part epoxy directions for use:

<https://youtu.be/GRX1RyknYqc>



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Permabond ET5390

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