

Features & Benefits

- Controlled flow
- Full cure at room temperature
- Adhesion to a variety of substrates
- Excellent resistance to chemicals
- High temperature resistance

Description

PERMABOND® ET5431 is a two-part adhesive with a soft paste consistency. A good bond is achieved with a wide variety of surfaces including wood, metal, glass, ceramic, GRP and some plastics. Performance at high temperature and excellent chemical resistance are important features of this product.

Physical Properties of Uncured Adhesive

	ET5431A	ET5431B
Chemical composition	Epoxy Resin	Polyamine Hardener
Appearance	White	Ivory
Viscosity @ 23°C	2 rpm: 140,000-200,000 mPa.s (cP) 20rpm: 60,000-120,000 mPa.s (cP)	2 rpm: 50,000-100,000 mPa.s (cP) 20rpm: 20,000-50,000 mPa.s (cP)
Specific gravity	1.65	1.66

Typical Curing Properties

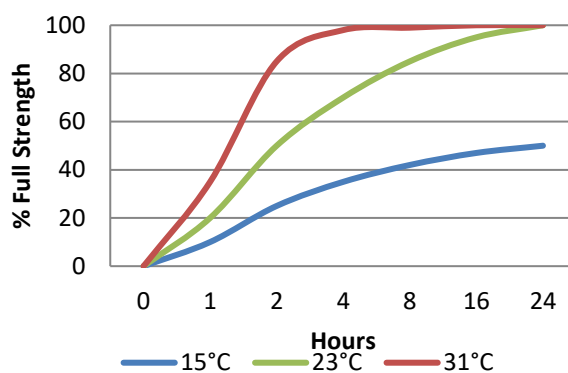
Mix ratio	2:1 by volume
Maximum gap fill	1 mm 0.04 in
Usable / pot life @23°C	25 Minutes
Working strength	@ 23°: 2-3 hours @ 60°: 20 mins
Full cure	@23°C: 24 hours @60°C: 1 hour

Typical Performance of Cured Adhesive

Shear strength (mild steel)* (ISO4587)	Cured 72hrs @23°C: >12 N/mm² (1700 psi)
Hardness (ISO868)	80-85 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.

Hot Strength

Temperature	Strength
23°C	12 N/mm²
50°C	17 N/mm²
75°C	11 N/mm²
100°C	5.6 N/mm²
125°C	4.7 N/mm²
150°C	4.4 N/mm²
175°C	3.6 N/mm²

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

ET5431 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.

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.

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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. 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 25mins 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 24 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 ET5431

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