

Features & Benefits

- Adhesion to a wide variety of substrates
- Full cure at room temperature
- Easy to apply
- Electrically conductive paste
- Good thermal conductivity

Description

PERMABOND® ET5453 is a two-part, 9:1 mixable epoxy adhesive of paste consistency. The main feature of this product is its excellent electrical conductivity with a resistance of less than 10 Ohms.

Physical Properties of Uncured Adhesive

	ET5453A	ET5453B
Chemical composition	Epoxy Resin	Polyamine Hardener
Appearance	Silver-copper	Amber
Viscosity @ 25°C	Thick paste	550 mPa.s (cP)
Specific gravity	3.0	1.0

Typical Curing Properties

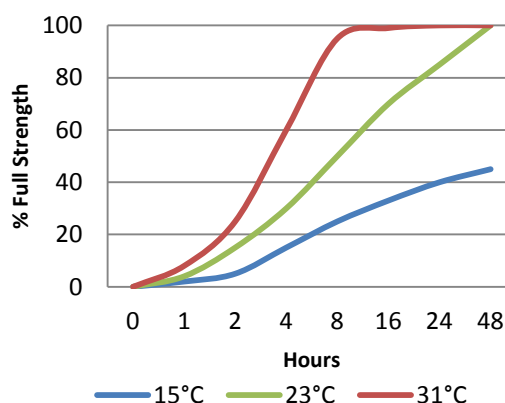
Mix ratio	By volume: 100:33 By weight: 9:1
Maximum gap fill	2 mm 0.08 in
Usable / pot life @23°C	50-60 minutes
Handling time @23°C	2-3 hours
Working strength @23°C	6-8 hours
Full cure @23°C	48 hours

Typical Performance of Cured Adhesive

Shear strength (mild steel)* (ISO4587)	>6 N/mm ² (>870 psi)
Hardness (ISO868)	>80 Shore D
Thermal conductivity	2 W/(m.K)

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

Strength Development

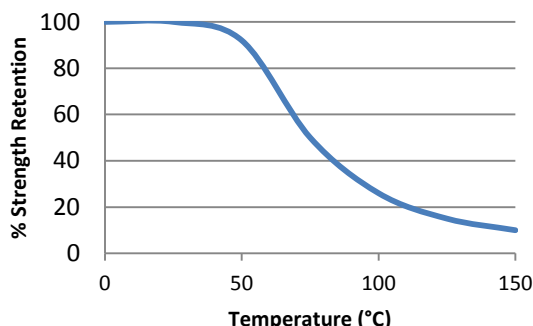


Graph shows typical strength development of bonded components. An increase of 8°C in temperature will halve the cure time. Lower temperatures will result in a slower cure time.

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.

No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.

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.

ET5453 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.

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. Measure or weigh material in correct ratio.
2. Mix resin and hardener thoroughly.
3. Apply adhesive taking care not to entrap air.
4. Join the parts. Parts must be joined within 50-60 minutes of mixing the two epoxy components.
5. Large quantities and/or higher temperature will decrease the usable life or pot life.
6. Apply pressure to the assembly by clamping for 2-3 hours or until handling strength is obtained.
7. Full cure will be obtained after 48 hours at 23°C (73°F). Heat can be used to accelerate the curing process.

Storage & Handling

Storage Temperature	5 to 25°C (41 to 77°F)
---------------------	------------------------

Contact Permabond:

- Americas +1 732 868 1372
• US 800-640-7599
- Asia + 86 21 5773 4913
- Europe +44 (0) 1962 711661
• UK 0800 975 9800
- Deutschland 0800 111 388
- France 0805 111 388

info.americas@permabond.com

info.europe@permabond.com

info.asia@permabond.com

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.

No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.