

### Features & Benefits

- Excellent adhesion to stainless steel
- Cures at room temperature
- EU Food Contact 10/2011 compliant
- FDA compliant
- High shear strength
- Excellent temperature resistance

### Description

PERMABOND® ET5162 is a lightly thixotropic, 2-part epoxy adhesive designed to be compliant to both FDA 175.105 and EU food contact regulations 10/2011. ET5162 is designed primarily for bonding of stainless steel in food contact applications, however this will bond a variety of other substrates including steel, aluminium and composites.

### Physical Properties of Uncured Adhesive

|                      | ET5162A                  | ET5162B                   |
|----------------------|--------------------------|---------------------------|
| Chemical composition | Epoxy Resin              | Modified Amine            |
| Appearance           | Off-white                | White                     |
| Viscosity @ 25°C     | 20,000-40,000 mPa.s (cP) | 90,000-110,000 mPa.s (cP) |
| Specific Gravity     | 1.15                     | 1.15                      |

### Typical Curing Properties

|                        |              |
|------------------------|--------------|
| Mix ratio by volume    | 2:1          |
| Maximum gap fill       | 2 mm 0.08 in |
| Gel time @23°C         | 60-80 mins   |
| Working strength @23°C | 12 hour      |
| Working strength @60°C | 30 mins      |
| Full cure @23°C        | 72 hours*    |
| Full cure @60°C        | 1 hour       |

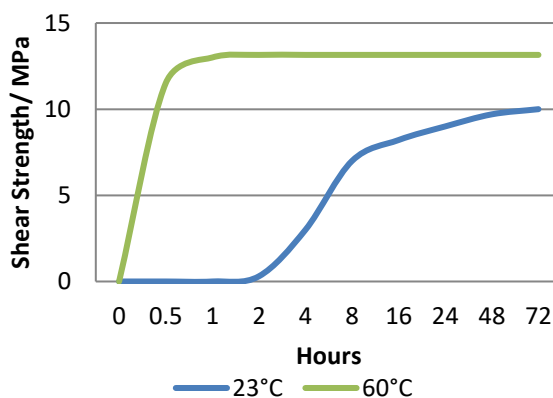
\*For best results we recommend curing at 60°C.

### Typical Performance of Cured Adhesive

|                                               |                                                                                        |
|-----------------------------------------------|----------------------------------------------------------------------------------------|
| Shear strength* (ISO4587) cured 72 hrs @ 23°C | Stainless Steel: 10-15 N/mm² (1450-2200 psi)<br>Aluminium: 8-10 N/mm² (1160-3800 psi)  |
| Shear strength* (ISO4587) cured 1 hour @ 60°C | Stainless Steel: 15-20 N/mm² (2200-2900 psi)<br>Aluminium: 11-13 N/mm² (1160-1890 psi) |
| Hardness (ISO868)                             | 80-90 Shore D                                                                          |

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

### Strength Development

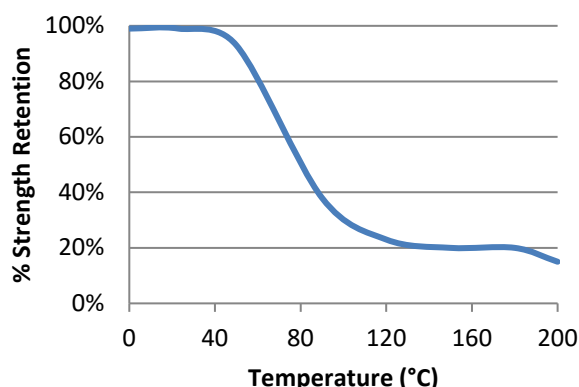


Graph shows typical strength development of bonded aluminium components. Curing at 60°C improves the crosslinking and results in higher final strength values. Lower temperatures will result in a slower cure.

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.*

ET5162 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 (-67°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.**

## 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. For bulk applications ensure the resin and hardener are thoroughly mixed and in the correct proportion.
2. Apply material to one of the substrates and avoid entrapping air.
3. Assemble the parts applying sufficient pressure to ensure the adhesive spreads to cover the entire bond area.
4. Use a jig / clamp to prevent parts moving during cure.
5. It is advisable not to disturb the joint until the adhesive is fully cured.

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

**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>



## Storage & Handling

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

[www.permabond.com](http://www.permabond.com)

• UK: 0800 975 9800

• General Enquiries: +44 (0)1962 711661

• US: 732-868-1372

• Asia: + 86 21 5773 4913

[info.europe@permabond.com](mailto:info.europe@permabond.com)

[info.americas@permabond.com](mailto:info.americas@permabond.com)

[info.asia@permabond.com](mailto: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.