PERMABOND® ET5411

Two-Part Epoxy

Technical Datasheet

Features & Benefits

- Adhesion to a wide variety of substrates
- Easy to apply
- High shear and peel strength
- Good impact strength
- High temperature resistance

Description

PERMABOND® ET5411 is a two part adhesive with a soft paste consistency. When fully cured, which must be at temperatures above 90°C, ET5411 exhibits exceptional chemical and temperature resistance. The controlled flow properties as well as its ease of mixing and application, enables the adhesive to be used where gap filling is required.

Physical Properties of Uncured Adhesive

	ET5411A	**ET5411B**
Chemical composition	Epoxy Resin	Anhydride Hardener
Appearance	White	Black
Viscosity @ 25°C	20rpm: 40,000-60,000 mPa.s *(cP)* 2rpm: 100,000-200,000 mPa.s *(cP)*	20rpm: 10,000-15,000 mPa.s *(cP)* 2rpm: 50,000-80,000 mPa.s *(cP)*
Specific gravity	1.4	1.2

Typical Curing Properties

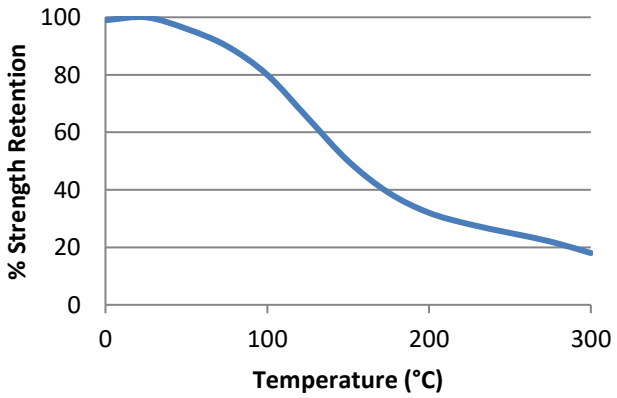
Mix ratio	2:1 by volume 2:1 by weight
Maximum gap fill	2 mm *0.08 in*
Usable / pot life @23°C	100ml: 16 hours Thin film: 30 hours
Full cure	@130°C: 2 hours

Typical Performance of Cured Adhesive

Shear strength* (ISO4587) *(cured 2 hrs @ 130°C)*	Mild steel: 21 N/mm² *(3000 psi)* Stainless Steel (degreased): 22-28 N/mm² *(3190-4060 psi)* Stainless Steel (abraded): 26-35 N/mm² *(3770-5075 psi)* Aluminum (degreased): 14-18 N/mm² *(2030-2610 psi)* Aluminium (abraded): 17-23 N/mm² *(2465-3335 psi)*
Hardness (ISO868)	88 Shore D
Elongation at break	<2%

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

Temperature Resistance



ET5411 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.

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.

Storage & Handling

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

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. For bulk application, ensure the resin and hardener are thoroughly mixed and in the correct proportion. Avoid entrapping air.
3. Apply material to one of the substrates.
4. Join the parts. Parts must be joined within 16 hours 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 until handling strength is obtained.
7. Full cure will be obtained after 2 hours at 130°C. The product requires a heat cure to obtain full strength.

Video Links

Surface preparation:
https://youtu.be/8CMOMP7hXjU

Two-part epoxy directions for use:
https://youtu.be/-sG85TtNlF4

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
info.americas@permabond.com
info.asia@permabond.com