PERMABOND® ET515

Two-Part Epoxy

Technical Datasheet

Features & Benefits

- Adhesion to a wide variety of substrates
- Full cure at room temperature
- Easy to apply
- High shear and peel strength
- Good impact strength

Description

PERMABOND® ET515 is a 1:1 mixable epoxy adhesive. **ET515** is a semi-flexible toughened adhesive with good adhesion to a variety of substrates such as wood, metal, ceramics and some plastics and composites. It's a relatively fast curing epoxy; reaching handling strength in 15 minutes. It is ideal for bonding different materials where differential thermal expansion is anticipated.

Physical Properties of Uncured Adhesive

	ET515A	**ET515B**
Chemical composition	Epoxy Resin	Polyamine Hardener
Appearance	Colourless	Amber
Viscosity @ 25°C	20,000 mPa.s (cP)	19,000 mPa.s (cP)
Specific gravity	1.14	1.14

Typical Curing Properties

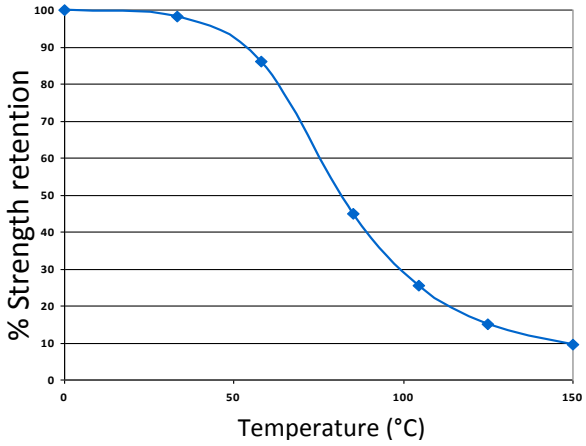
Mix ratio by volume	1:1
Maximum gap fill	2 mm ***0.08 in***
Usable / pot life @20°C	10-15 mins
Handling time	15-25 mins
Full cure	72 hours

Typical Performance of Cured Adhesive

Shear strength ASTM D-1002	Mild steel 8 - 12 N/mm² ***(1200 - 1750psi)*** FRP Glass/Polyester 3-5 N/mm² ***(400-700psi)*** FRP Glass/Epoxy 4-6 N/mm² ***(600–900psi)*** Carbon Fibre 4-6 N/mm² ***(600–900psi)***
Peel strength (ISO 4578)*	60-80 N/25mm ***(13-18 PIW)***
Shore D hardness	40
Elongation at break	30%
Glass transition temperature Tg	40°C ***(104°F)***
Thermal conductivity	0.30 W/(m.K)

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

Temperature Resistance



ET515 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 material safety data sheet (MSDS).

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. 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 10 minutes 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 for 15-25 minutes or until handling strength is obtained.
6. Full cure will be obtained after 72 hours at 25°C (77°F). Heat can be used to accelerate the curing process.

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

Storage & Handling

Storage Temperature	5 to 25°C ***(41 to 77°F)***
Shelf Life Stored in original unopened containers	12 months

Other Products Available

Anaerobics

- Toughened
- Gas & water approved
- High temperature resistance
- Flexible

Cyanoacrylates

- Low bloom / low odour
- Flexible
- High temperature resistance

Epoxies

- Fast cure
- Toughened
- Flexible grades

Toughened Acrylics

- Rapid cure
- Low odour
- Pre-mixed
- Gap filling

UV Light Cured

- Glass / plastic bonding
- Optically clear
- Non-yellowing

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