PERMABOND® ET5429

Two-Part Epoxy

Technical Datasheet

Features & Benefits

- Ideal for bonding composite materials
- Easy to apply
- High shear and peel strength
- Good impact strength
- High temperature resistance

Description

PERMABOND® ET5429 is a thixotropic two-part adhesive with excellent resistance to impact and vibration. The controlled flow properties as well as its ease of mixing and application, enables the adhesive to be used where gap filling or vertical application is required. Permabond® ET5429 has been found to provide exceptional performance even at elevated temperatures. It is ideal for use in construction of composite assemblies.

Physical Properties of Uncured Adhesive

	ET5429A	**ET5429B**
Chemical composition	Epoxy Resin	Polyamine Hardener
Appearance	White	Black
Mixed appearance	Charcoal black	
Viscosity @ 25°C	20rpm: 150,000-250,000 mPa.s *(cP)* 2rpm: 200,000-400,000 mPa.s *(cP)*	20rpm: 40,000-80,000 mPa.s *(cP)* 2rpm: 100,000-200,000 mPa.s *(cP)*
Specific gravity	1.0	1.0

Typical Curing Properties

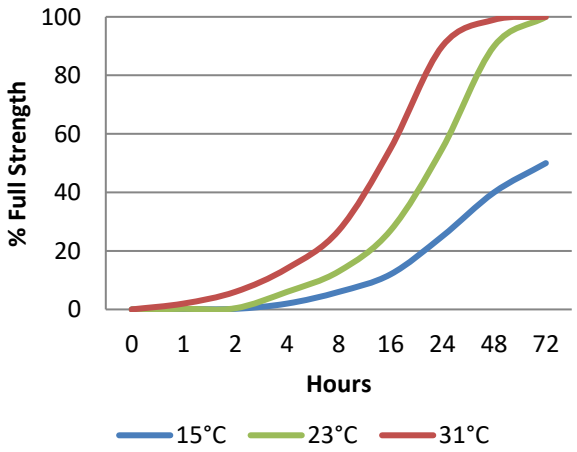
Mix ratio	2:1 by volume 2:1 by weight
Maximum gap fill	5 mm *0.2 in*
Usable / pot life @23°C 10g mixed	2-4 hours
Handling time	23°C: 6-10 hours
Working strength	23°C: 24 hours 60°C: 1 hour
Full cure	23°C: 72 hours 60°C: 2 hours

Typical Performance of Cured Adhesive

Shear strength* (ISO4587)	Mild Steel: 18-22 N/mm² *(2600-3200psi)* FRP Glass/Polyester: 7-10 MPa *(1000-1450psi)* FRP Glass/Epoxy: 14-18 MPa *(2000-2600psi)* Carbon Fibre: 20-37 MPa *(2900-5400psi)* Aluminium: 19-21 MPa *(2800-3000psi)*
Peel strength (aluminium) (ISO4578)	150-230 N/25mm *(33-51 PIW)*
Impact strength (ASTM D-950)	30-40 KJ/m²
Hardness (ISO868)	65-75 Shore D
Elongation at break (ISO37)	<5%
Glass transition temperature Tg	50-60°C *(122-140°F)*
Dielectric strength	15-25 kV/ mm

**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.