PERMABOND® ET5428 BLACK

Two-Part Epoxy

Technical Datasheet

Features & Benefits

- Ideal for bonding composite materials
- Easy to apply
- High shear and peel strength
- Rapid cure speed
- High temperature resistance
- Colour matched for carbon fibre bonding

Description

PERMABOND® ET5428 BLACK 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 is required. Permabond® ET5428 BLACK has been found to provide exceptional performance even at elevated temperatures.

Permabond® ET5428 BLACK has been specifically formulated for use in applications requiring toughness and high strength and shows special benefits in the construction of composite assemblies.

Physical Properties of Uncured Adhesive

	ET5428 BLACK A	ET5428 BLACK B
Chemical composition	Epoxy Resin	Polyamine Hardener
Appearance	White	Black
Mixed appearance	Charcoal black	
Viscosity @ 25°C	20rpm: 80,000-150,000 mPa.s *(cP)* 2rpm: 200,000-400,000 mPa.s *(cP)*	20rpm: 100,000-300,000 mPa.s *(cP)* 2rpm: 700,000-1,500,000 mPa.s *(cP)*
Specific gravity	1.1	1.1

Typical Curing Properties

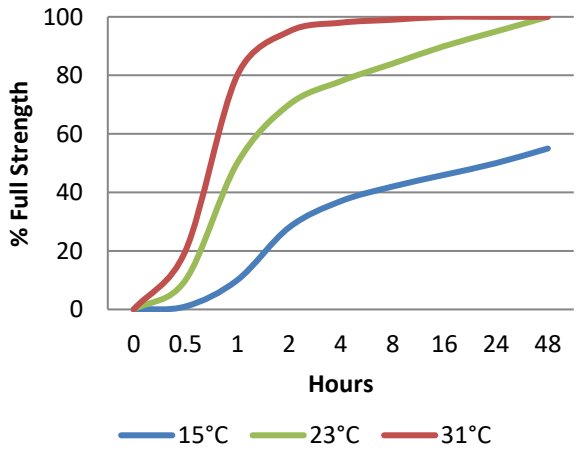
Mix ratio	2:1 by volume 2:1 by weight
Maximum gap fill	5 mm *0.2 in*
Usable / pot life @23°C 10g mixed	10-20 mins
Handling time	23°C: 30-45 mins
Working strength	23°C: 1 hour 60°C: 15 minutes
Full cure	23°C: 24-48 hours 60°C: 1 hour

Typical Performance of Cured Adhesive

Shear strength* (ISO4587)	Mild steel: 18-22 N/mm² *(2600-3200psi)* FRP Glass/Polyester: 6-9 N/mm² *(900-1300psi)* FRP Glass/Epoxy: 24-28 N/mm² *(3500-4000psi)* Carbon Fibre: 20-38 N/mm² *(2900-5500psi)* Aluminium: 26-28 N/mm² *(3800-4000psi)*
Peel strength (aluminium) (ISO4578)	150-250 N/25mm *(33-55 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.