

PRO BOND GP-S

Structural Thixotropic Epoxy Adhesive

Rev: 2 09/20

Description

ProBond GP-S is a high-performance epoxy adhesive system for bonding, filling and grouting. ProBond GP-S is a two part, solvent free, thixotropic, amino-polyamide cured epoxy. This system provides a unique combination of good mechanical properties, good impact resistance, and is non-toxic when fully cured. It can be filled with certain fillers to increase viscosity, or to make a grouting material.

Part B is approved under FDA paragraphs 175.300 (b)(3)(viii) and 176.170 (b)(1) as an epoxy curing agent with approved materials, and in keeping with good manufacturing practice.

Uses

Secondary bonding of items in the wind energy, yacht building, general composites, sporting goods, moulds, tools, and civil engineering.

Mixing (resin: hardener)

The system should be mixed at the following ratios:

Volume: 1:1

Weight: 100:88

Mix on a flat, clean surface such a Formica or plastic sheet. Measure out quantities as above, using separate tools / spatulas to remove each component from its container to prevent cross-contamination. Mix thoroughly until a homogeneous paste of consistent colour is achieved. If a filler is to be added, add the filler only after complete mixing of the base and hardener has been achieved. Spread the mixed material on one or both surfaces, thick enough to extrude slightly when surfaces are mated. Bonded faces must be kept under pressure (not too much as this could result in too thin a bond line) and without movement until adhesive has set / cured.

Resistance (After full cure)

- Aliphatic solvents
- Vegetable oils
- Mineral oils
- Petroleum fuels
- Fresh and sea water

Preparation

Any surface to be bonded or treated must be clean, dry, sound and free from contamination such as oil, grease, paint, dust, etc. Smooth or glossy surfaces should be sanded or roughened by some appropriate method.

Fibreglass – Degrease, abrade to expose fibres, and degrease again with pure acetone or epoxy thinners.

Timber – Roughen surface by sanding / rasping. Vacuum wood dust off. Woods containing oils (e.g. Teak) must be thoroughly washed with pure acetone. Allow solvent to evaporate before bonding.

Formica / Melamine – Must be clean and free from any contamination. Abrade if necessary.

Aluminium – Degrease, abrade and degrease again. Apply adhesive within 30 minutes.

Glass – Wash with a quality detergent, water rinse and dry with paper towel. Wipe with alcohol.

Fibre Cement – Must be clean and free of dust.

Mild Steel – Must be free of mill scale, rust or oils. Abrade / abrasive blast. Bond within 30 minutes.

Concrete / Rock – Must be clean, dry and free of laitance and slurry.

Rubber – Degrease, roughen and degrease again. Wipe with pure acetone if needed. Allow solvent to evaporate before bonding.

Stainless Steel – Will not bond well and is generally not a candidate for bonding with ProBond GP-S.

Use “Pro-Bond 333 Hi-Bond” for Stainless steel.

Thermoplastics – (Polyethylene; Polypropylene; Nylons; PTFE’s; etc) These generally will not bond.

Polystyrene will bond well

Properties

- Thixotropic
- Solvent free
- Bonds most materials (see surface preparations)> Excellent bond strength
- Good chemical resistance when fully cured
- Can be used with fillers
- Semi-translucent when cured
- Can be colour pigmented

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|-------------------------------|-------|---|------------------------------|
| Pot Life at: | 15 °C | : | 90 minutes |
| | 20 °C | : | 60 minutes |
| | 25 °C | : | 45 minutes |
| | 30 °C | : | 30 minutes |
| | 35 °C | : | 20 minutes |
| Cure Time at 25 °C | | : | Touch Dry 6 -8 hours |
| | | | Practical Cure 24 hours |
| | | | Full Cure 7 days |
| Volume Solids | | : | 100% |
| Application Temperature | | : | Minimum 10 °C |
| | | | Maximum 35 °C |
| Service Temperature | | : | Max 120 °C (after post-cure) |
| Compressive Strength at 25 °C | | : | 70 mPa |
| Lap Shear Strength | | : | 25 to 30 N/mm ² |

GP-S (Epoxy Base)

| Property | Unit | Value |
|-------------------|------|-------------|
| Density at 23°C | kg/L | 1,10 |
| Flashpoint | °C | 110 |
| Viscosity at 23°C | | Thixotropic |
| EEW | g | 180-190 |
| Colour | | Off-white |

GP-S (Hardener)

| Property | Unit | Value |
|-------------------|------|-------------|
| Density at 23°C | kg/L | 0.97 |
| Flashpoint | °C | 150 |
| Viscosity at 23°C | | Thixotropic |
| Colour | | Amber |

Health and Safety

Skin contact must be avoided by wearing protective gloves. Overalls or other protective clothing should be worn when mixing, laminating or sanding. Contaminated work clothes should be thoroughly cleaned before re-use. Eye protection should be worn if there is a risk of resin, hardener, or epoxy dust entering the eyes. The inhalation of sanding dust should be avoided and any dust settling on the skin should be washed off. Ensure adequate ventilation in work areas. Respiratory protection should be worn if there is insufficient ventilation.

Transport and Storage

The resin and hardeners should be kept in securely closed containers during transport and storage. Any accidental spillage should be soaked up with absorbent material (sand, sawdust etc.) Suitable long-term storage conditions will result in a shelf life of 18 months for both the resin and hardeners. Storage should be in a warm dry place out of direct sunlight. The storage temperature should be maintained between 10°C and 25°C, as large fluctuations in temperature can cause crystallization. Containers should be firmly closed and not left exposed to air.

All statements, technical information and recommendations, including storage, contained in this publication are based on tests believed to be reliable, but their accuracy and/or completeness are not guaranteed. The user shall determine the suitability of this particular purpose and shall assume all risk and liability in connection herewith. The information contained herein is under constant review and liable to be modified from time to time.