

VINILGRAPH REBARS

1. DESCRIPTION

Bisphenol A-type epoxy vinyl ester resin with graphene, featuring low viscosity and medium reactivity. It is used for manufacturing fiber-reinforced polymer (FRP) reinforcing bars by pultrusion. Its formulation is optimized for efficient impregnation of glass, carbon, or basalt fibers, ensuring excellent wet-out and superior fiber-matrix adhesion, which is essential for high-performance structural applications. In addition, it provides excellent corrosion resistance against a wide range of organic and inorganic acids, alkalis, oxidizing chemicals, saline solutions, etc.

2. PROPERTIES

- High chemical and mechanical resistance.
- Improved thermal conductivity.
- No shrinkage during curing and no crystallization at low temperatures.
- Excellent corrosion resistance

3. APPLICATIONS

VINILGRAPH REBARS has been specially developed and recommended for the manufacture of fiber-reinforced polymer (FRP) reinforcing bars by pultrusion, using basalt fiber, glass fiber, or carbon fiber as reinforcement. Depending on the process parameters and the desired properties of the finished parts, this system may also be suitable for other manufacturing techniques, such as resin transfer molding (RTM), filament winding, BMC, SMC, or resin infusion.

In addition, it provides good interlayer adhesion and very low linear and volumetric shrinkage. For room-temperature curing, MEK peroxide should be added at a dosage between 1% and 1.5%, although it can be increased up to 2% to reduce gel time.

4. TERMS OF USE

Using VINILGRAPH REBARS the working temperature inside the mould/die/oven must be in the range of 120 and 240 °C. Attending to the length of the die and the sections and thickness of the parts produced, a pultrusion speed higher than 500 mm/min can be achieved, reaching up to 10 m/min during oven curing processes. The curing procedure must be defined according to the specific manufacturing process and the product geometry. Regarding better mechanical properties, the entire cross-section of the manufactured part must undergo the desired curing program. Curing will depend on the ratio of the different catalysts added to the mixture before application, such as MEK peroxide, BPO, tert-butyl peroxide, etc., and the mixture must be thoroughly homogenized. For more information, please contact the Graphenano Composites technical support.

5. TECHNICAL CHARACTERISTICS

APPEARANCE	Dark liquid
DENSITY (kg / cm³)	1.0 – 1.2
GEL TIME [25°C] (min)¹	8 – 10
VISCOSITY BROOKFIELD [H3, 25°C] (cP)	400 – 800

6. MECHANICAL PROPERTIES

	STANDARD	VALUES
FLEXURAL STRESS(MPa)	UN 14125	18 000 – 23 000
FLEXURAL STRENGTH (MPa)	UN 14125	250 – 350
DEFLECTION (mm)	UN 14125	2.5 – 4.0

7. STORAGE AND PACKAGING

- The product must be stored in a dry place at a temperature below 25°C.
- Expiration date is 1 year under those conditions.
- Generally, the products will be supplied in drum and IBC format.
- For other quantities and/or packaging: contact Graphenano Composites Sales Department.