How to achieve optimal results with EpoxiPure (112P80 / 112P81)

General advice

Thin nylon stockinette (95P2/..) should always be placed between the arming layers and the PVA-foil, in order to guarantee the direct transport of the resin into the first / last layer. The resin perfectly harmonises with the arming material (C-fibre) and therefore "absorbing layers" such as nylon stockinette layers are not necessary.
The EpoxiPure lamination resin does not become hot during hardening (curing); which causes insulations of structural parts to be laminated to stay where they are. Furthermore, fine gas bubbles at the construction surface do not develop due to cold hardening (curing). The permanent elasticity and stability strongly depends on the design of the construction and the proportions of fibre and resin. Generally, resin clusters in the laminate should be avoided and excessive resin should be spread out.

Mixing

EpoxiPure lamination resin is a duroplast and hardens (cures) by polyaddition. This means that resin and hardener always must be in the correct proportion to each other in order to achieve optimal cross-linking. Use a calibrated digital scale (readability 1 g) and obey the mixing ratio 100 g resin: 40 g hardener. Both components must be thoroughly mixed with a wooden spatula in a clean mixing container for at least 3 minutes.

Colour

To optimally tint the EpoxiPure lamination resin with Sttreifeneder GelCoat, we recommend following mixing ratio:

- 100 parts resin : 40 parts hardener + max. 14 parts (10%) GelCoat = 154 parts usable resin
- see also flyer "How to achieve optimal results with GelCoat (95C10/... – 95C16/...)"

Alternatively, Streifeneder Colouring Pastes (112P36/…) may be used as well. For use with Colouring Pastes, the colouring paste quantity must not exceed 3 % of the resin quantity. To achieve satisfactory colour coverage and to avoid the carbon fibre shining through, the last arming layers should consist of at least 2 layers of nylon stockinette or similar.

Laminating

To achieve a safe connection (bonding) between first and second resin layer, it is necessary to thoroughly roughen the surface with sanding paper (K120) and to pre-treat grease free (Loctite 7063 Quick-Cleaner 118P41). For lamination with EpoxiPure, the plaster seal must be removed prior to hardening in the oven (tempering).

Time factor

After mixing resin and hardener, the time left to process the material is approx. 45 minutes. This period also depends on the surrounding temperature and the mixed quantity. Hint: The processing time can be extended by quick, extensive distribution of the EpoxiPure lamination resin throughout the lamination process. Consider the optimal room- and storage temperature of 18 °C – 23 °C (64 °F – 73° F).

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Hardening (curing)

There are four options to achieve thorough hardening (curing) of the EpoxiPure lamination resin, as the hardening process can be individually controlled by temperature changes:

- standard: 10 hours at 23 °C (83 °F) room temperature + vacuum –> demouldable –> pre-tempering for optimal grinding 1 hour at 60 °C (140 °F) –> final tempering for tension-free final hardness: 1 hour at 100 °C (212 °F)
- low temperature: 10 hours at 23 °C (83 °F) room temperature + vacuum –> demouldable –> pre-tempering for optimal grinding 1 hour at 60 °C (140 °F) –> final tempering for tension-free final hardness: 12 hours at 70 °C (158 °F)
- without pre-tempering: 48 hours at 23 °C (83 °F) room temperature + 10 hours vacuum –> demouldable –> final tempering for tension-free final hardness: 2 hours at 80 °C (176 °F)
- quick hardening (curing): After casting under vacuum 2,5 hours at 60 °C (140 °F) for optimal grinding –> final tempering for tension-free final hardness: 1 hour at 100 °C (212 °F)

Attention:
During quick curing with heat, the resin becomes more liquid, therefore set the vacuum to max. 0,4 bar.
If wooden socket attachment blocks (12A5/-3/-7) are used, the water content of the wood must be considered (6 – 10 %).
If the socket is hardened by heat, unpredictable shrinking of the wood may occur. Therefore, we recommend the use of metal lamination disks (16A3 or 16A5).

Personal protection devices

The ingredients have been selected carefully, in order to avoid hazardous or poisonous amines. We also guarantee that the resin is 100 % free of solvents & phenols. If the EpoxiPure lamination resin is processed according to the instructions, vapours or gases will not develop.
When processing EpoxiPure lamination resin, please use following personal protection devices:

- protective goggles
- nitrile rubber protection gloves
- it is always recommended to use a breath-protection device when processing carbon fibres

Absolutely safe use of the hardened product in direct skin contact; certified by Hohenstein Laboratories GmbH & Co. KG.

Further processing

Due to the material characteristics of duroplast, the cutting edges can be processed without smearing. I.e. when grinding the cutting edges, the grinding tool does not clog up with residue.

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