

## INTRODUCTION

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### Quick notes:

High impregnation resin, used:

- For hand lay-up repairs and lamination,
- as protective base layer.

**PRO-EPOX 101** is an epoxy resin with improved substrate penetration and wetting of fibers, for interior and exterior use, above and below the waterline. Use for:

- **Lamination**, GRP and FRP hand lay-up repairs.
- **Protective base / sealer layer** on synthetic and wooden hulls. Also as tie coat for lead keels.

## APPLICATION METHOD

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Apply using brush/roller or batten (for wet prepping).

## FEATURES

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- 3:2 by volume,
- improved penetration of substrate and fibers,
- non-blushing,
- low odor,
- curing will continue even if ambient conditions become unfavorable.

## LIMITATIONS

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When planning to use in temperatures below 20 °C, it must be stored at higher temperatures during the days leading up to application. Additionally, part A can safely be heated up to 40 °C (see also section on Crystallization below).

## PRODUCT DATA

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PRO-EPOX 101: Properties	
Mix ratio, by volume	3:2
Mix ratio, by weight	100:59
Color	comp. A: 1, transparent
<i>Gardner index, ASTM D1544</i>	comp. B: 4, light yellowness mixture: 2, very slight yellowness
Result	transparent gloss
Volume solids, %	100
V.O.C., g/lit	0
Specific weight	1.11
<i>of mixture, approx., ISO 2811, kg/lit</i>	
Shelf life (in controlled environment), years	2
Packaging, comp. A+B, lt	2, 30

## CURING SPEED

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PRO-EPOX 101: Curing speed			
	10 °C	20 °C	30 °C
Pot life *, mins	150	75	45
Thin film gel time, hrs	3	1.5	1
Touch dry time, hrs	5.5	2.5	2
Tack free, hrs	12	4	3
Hard dry / sandable, hrs	36	24	12

[Determined in controlled laboratory conditions. To be used as a guide only.]

\* Note that pot life is highly dependent on volume of mixture and container size. Employ the usual epoxy resin techniques (e.g. temperature controlled large shallow container) in order to achieve a reasonable working life.

PRO-EPOX 101 will continue to cure for 2-7 days. This does not prevent recoating/overcoating.

## RECOAT AND OVERCOAT TIMES

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### Quick notes:

As a rule of thumb, recoat/overcoat after the resin has gelled and while it is still tacky.

**'Gel-to-tack-free window':** As a rule of thumb, recoating and overcoating without fairing must be done within the 'gel-to-tack-free window'. After this time, fairing is necessary.

- **Lamination**

Fairing usually follows lamination jobs. If filling is required before fairing, use the PRO-FILL product of your choice within the 'gel-to-tack-free window'.

- **Hull sealing**

- **Recoat, porous substrates:** In cases where the resin is readily absorbed on application, apply the subsequent layer back-to-back.
- **Recoat, non-porous substrates:** Recoat within the 'gel-to-tack-free window'.
- **Overcoat:** Use the 'gel-to-tack-free window' to overcoat with a PRO-PRIME or PRO-FILL product.

PRO-EPOX 101: 'Gel-to-tack-free window'			
	10 °C	20 °C	30 °C
Recoat/overcoat window, hrs	3-12	1.5-4	1-3

## CONSUMPTION

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- **Lamination**

Consumption by weight:

- Fiberglass : resin      1 : 2.5
- Carbon fiber : resin    1 : 1

- **Hull sealing**

The number of layers to be applied will depend on substrate porosity.

- **Porous substrates, 1-3 layers, 15 m<sup>2</sup>/lt**

On substrates like faired fiberglass and wood the first layer will quickly impregnate and only the second one will start forming small areas of continuous coating.

- **Non-porous substrates, 1 layer, 30 m<sup>2</sup>/lt**

On substrates like metal one layer will usually be sufficient.

## SURFACE PREPARATION

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### Quick notes:

- Ensure hull is dry,
- remove greasy / oily contaminants,
- fair,
- dry clean.

Both preparation and application should be carried out in optimal conditions, namely temperature in the range of 10-35 °C (ambient, substrate and product), ideally 20-35 °C for hull sealing, and normal humidity levels. Following application, if temperature drops, curing will proceed, even close to 0 °C, albeit at lower speeds.

The application surface must be clean, free of dust, salt, water, grease, oil, wax, silicone, rust and other contaminants deposited over time or during the repair process.

In the case of oily / greasy substrates, use **PRO-CLEAN X**, the xylene based cleaner. Ensure that no residues remain, either from the initial contaminants or from the cleaner.

For surfaces free of grease and oils, the recommended way of cleaning it is by dry cloth assisted by vacuum dust extractor or compressed air (free of compressor oils). Use a large cloth, apply very lightly and change sides continuously so as to remove dust instead of pressing it on the substrate. Low grade grinding will help with more persistent residues and improve adhesion. Avoid using wet or waxed tissues. As an alternative, use **PRO-CLEAN IPA**, the fast drying, residue free, isopropyl alcohol solvent.

Do not apply on substrates lacking cohesion. In such cases, unsound parts of the application surface must be removed.

## APPLICATION

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### Quick notes:

- Size of mix dependent on pot life,
- apply thin layers using brush or roller.

Using the indicative data given above, prepare quantities which you will comfortably have the time to apply within the pot life window. Mix the two components until a uniform consistency has emerged. Do not dilute.

### • Lamination

Use the lay-up technique that is most suitable to your repair. We also offer the following two additives for PRO-EPOX 101:

- **AUX-101** silica for increased thixotropy,
- **AUX-201** fiber additive for increased cohesion between FG plies.

### • Hull sealing

### TECHNICAL DATA SHEET

You are advised to apply all coats plus the first coat of primer in one day as primers are easier to work with than clear epoxy resin once the recoat window has elapsed.

- **Lead keel tie coat**

Apply one coat on clean keel **as soon as possible** after low grade grinding.

In all cases, apply thin layers using brush or roller.

### PACKAGING

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2 lt, 30 lt (total volume of both components).

### STORAGE & SHELF LIFE

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At least 24 months from the date of manufacture in the original sealed container. The ideal storage temperature is 10-25 °C at normal humidity levels.

### CRYSTALLIZATION

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During the colder months, as temperature fluctuates above and below 10 °C, component A, the resin side, will quickly become more viscous and may eventually become hazy or even slushy. This happens because these conditions favor the development of crystalline domains. This phenomenon, called crystallization, is reversible and does not affect the performance of the resin. It is reversed by heat. Small quantities can be heated to just 30 °C and crystals will melt very quickly. However larger containers like 30 lt drums and barrels will require multiple days at elevated heat (50 °C) to revert crystallization. This should be taken into account when planning your work.

### SAFETY

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Apply in well-ventilated spaces. Follow personal safety guidelines relating to epoxy products, including the use of proper mask and protective clothing. Avoid physical contact with the uncured substances.

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