

INTRODUCTION

PRO-EPOX 101 is an epoxy resin formulated for ambient curing, maintaining its high performance under the unfavorable conditions which are usually encountered in shipyards. It offers a very manageable pot life and will continue to cure even if temperatures drop to near 0 °C. It also exhibits excellent resistance to amine blushing.

PRO-EPOX 101 is a **higher viscosity** resin, which is very useful when applying to vertical or inverted surfaces. Nevertheless, due to its lowered surface tension, it offers faster foam diffusion, substrate penetration and wetting of fibers and wood.

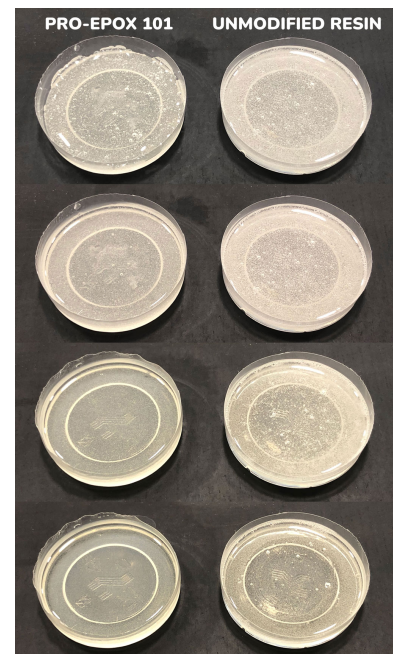
It is suitable for interior and exterior use, above and below the waterline. Its two main uses are:

- **Lamination**, GRP and FRP hand lay-up repairs.
- **Protective base / sealer layer** on synthetic and wooden hulls and structures.

FOAM DIFFUSION

The foam diffusion property is desirable in a resin as it results in reduced voids in coatings and laminates. This is important because voids can contribute to the appearance of osmosis. Minimizing voids also results in stronger laminates.

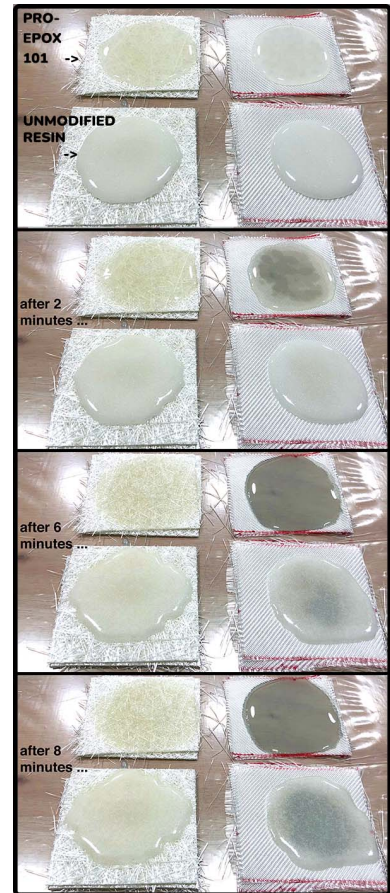
A comparative test is shown in the picture to the right. It can be seen that PRO-EPOX 101 very quickly diffuses macrofoam created during mixing of the components and gradually dissipates all visible microfoam.



WETTING

The wetting property of an epoxy resin is especially helpful for professionals in boat repair and maintenance. In other sectors various techniques can be used to aid wetting, e.g. vacuum and temperature control. In a typical yard, however, these options are not available.

The test pictured on the right shows how quickly PRO-EPOX 101 wets mat and roving fiberglass fabrics, compared to a standard resin. After 6 minutes, it is fully absorbed by the mat fabric and has wetted the roving fabric all the way to the bottom.



AMINE BLUSHING

Amine blushing is a by-product often created during ambient curing, especially under cold and humid conditions. While it does not affect the properties of the laminate/coating, it has to be removed before recoating or overcoating. To remove it, it either has to be washed off or solvent wiped. In both cases, the resin will have to be hard dry before soap water or solvent is applied to it. The result is, extra work, extra time until full cure and loss of the recoat window. Hence, a resin system which minimizes or eliminates blushing is a significant aid when working in the yard.

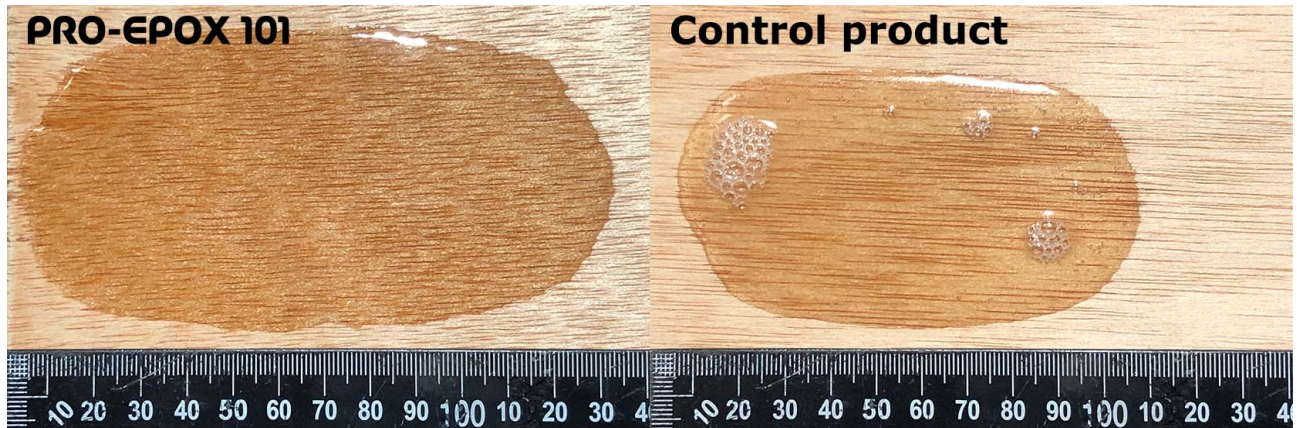
In the picture above, we have let a sample of PRO-EPOX 101 and a sample of an unmodified resin cure outdoors. Blushing is visible on the unmodified resin sample.



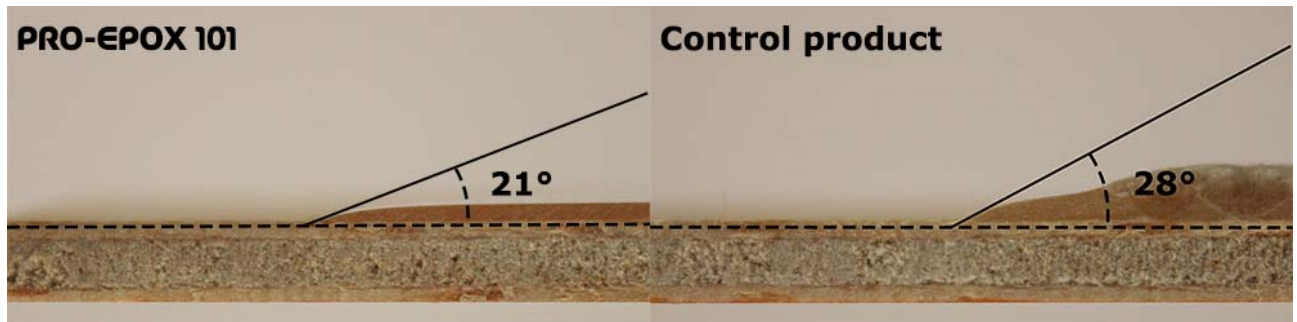
IMPREGNATION OF WOOD

PRO-EPOX 101 is highly capable as a wood sealer. Its wetting and impregnation of wood is demonstrated here using two simple tests: Flow out and impregnation. PRO-EPOX 101 is compared to an established resin system. The tests were carried out at 20 °C on plywood (no fairing done).

1. Flow out test

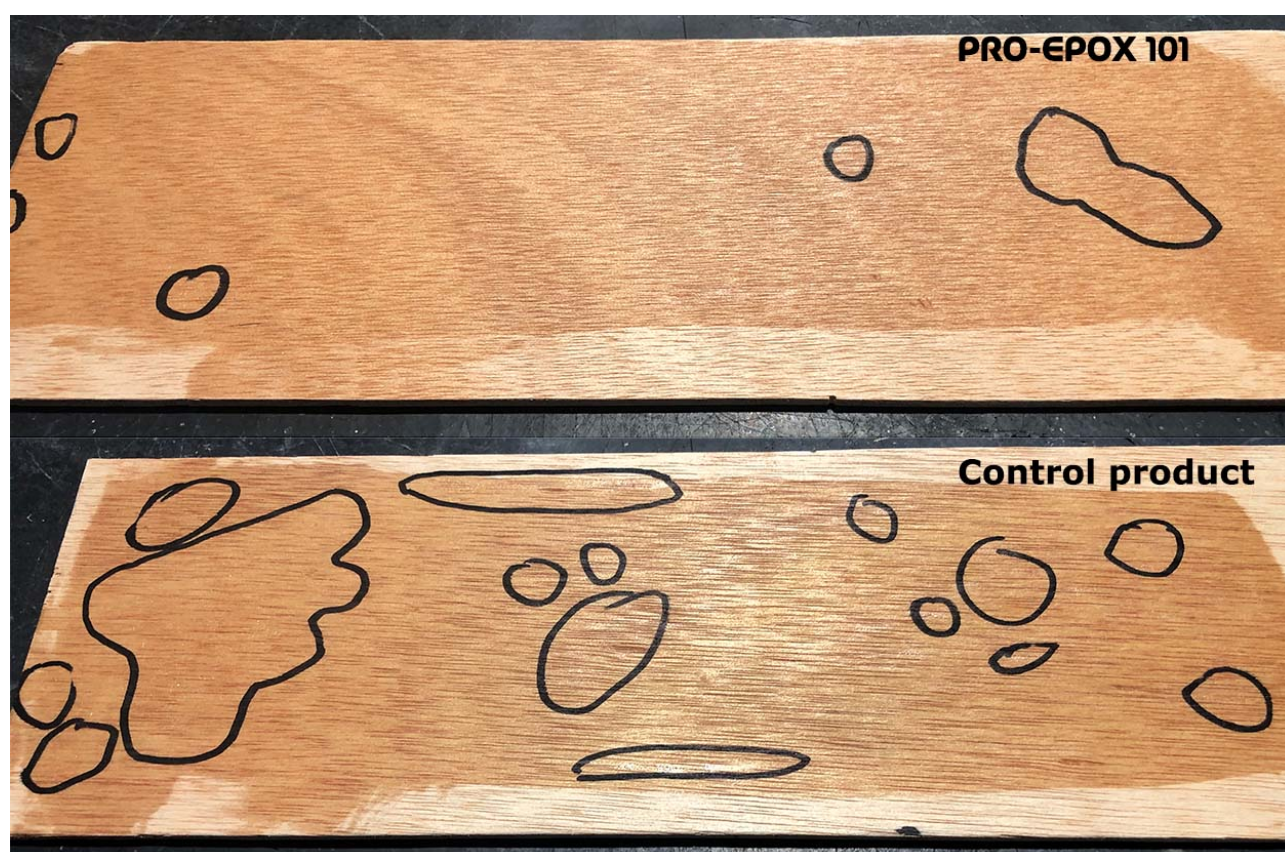


In this test we deposit 5 ml of each mix and let it flow out unassisted. PRO-EPOX 101 exhibits excellent flow out and covers almost double the area. This result is confirmed by the contact angle measurements:



2. Impregnation test

Here we deposit 3 ml of each mix on an equally sized panel and make exactly two passes using a batten in order to spread out the mix as evenly as possible. Once it has cured, we observe the size and number of glassy islands, i.e. areas where the resin did not fully impregnate (unfortunately not easily discernible on photos below as the tablets have to be observed in various angles in order to see them). Here too, PRO-EPOX 101 performs sufficiently well.



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