

# Lantor Soric<sup>®</sup> TF in combination with D7760

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## **Skin coat**

In the marine industry there are a number of reasons why a skin coat is applied before processing the actual constructive laminate:

- To prevent Osmosis
- To prevent print through of the fabrics and core of the constructive laminate.
- To protect the gel coat / mould when walking in the mould is necessary for draping the dry laminate pack for Vacuum Infusion.
- To have superior mechanical properties in the skin for protective/impact reasons.

When the reason of using a skin coat is to prevent osmosis and print through, there are alternatives.

## **Vacuum infusion & print through.**

Laminates made in Hand Lay-up differ in many ways when compared to laminates made in Vacuum Infusion. Differences occur in laminate thickness, glass percentages, resin consumption and mechanical properties.

Because of the higher pressure that is used in vacuum infusion compared to hand lay-up, the laminate is compressed more resulting in a thinner laminate with less resin, a higher volume fraction of glass and higher mechanical properties.

The consequences of these new properties though, are increased risk of osmosis and an increased risk of print through of fabrics and fibers. However, **these are issues that can be solved.**

Conventionally a skin coat is applied to block most of the print through. When the rest of the laminate is vacuum infused, though, the pressures can still print through some heavy fabrics to the outer surface of the laminate. This can be prevented easily by using Lantor Soric<sup>®</sup> TF in vacuum infusion just after the skin coat.

## Vacuum Infusion & Osmosis

Osmosis will be more of a risk when glass percentages in the skin of the laminate are higher. With higher glass volume, more possible voids are introduced; more voids create higher capillary forces which are the driving force for osmosis. Therefore a laminate made in vacuum infusion has a higher risk for osmosis. This is why a skin coat is used as well; a more resin rich layer will have less risk.

The use of a skin coat, however, takes an extra processing step, slow down the process and total costs are increased.

So, although the skin coat takes care of osmosis and some print blocking, it does compromise a full closed mould processing. How can we use the pro's of a skin coat without having the disadvantages that come with it?

### LANTOR FINISHMAT D7760!

Lantor Finishmat D7760 is an acrylic veil that, because of its structure, creates a resin rich layer when infused. The Lantor Finishmat D7760 allows infusion of a boat in a single shot, when used directly to the gel coat (or mould). Tests in Lantor's lab have shown that because of this resin rich layer of the Lantor Finishmat D7760 veil, the osmosis resistance of the Vacuum Infused part is even better than a laminate with a skin coat applied in hand lay-up. (See photo's of this test in the appendix). Therefore a skin coat can be left out and a laminate can be infused in a single shot!

Decrease costs by infusing the hull in a single shot **AND** prevent print through of fabrics and fibers by applying a combination of Lantor Soric TF and Lantor Finishmat D7760 in the skin of the laminate. Lantor Soric TF will block the print through of the fabrics and core used in the constructive laminate. The resin rich layer created by the Lantor Finishmat D7760 will both; block print through of the glass fibers in between the Lantor Finishmat D7760 and Lantor Soric TF; and create a good resin rich layer to prevent osmosis. A typical lay-up with minimum print through in a single shot infusion is therefore:

Gel coat
Lantor Finishmat D7760
2x CSM/CFM
Lantor Soric TF
Reinforcements
Core material
Reinforcements

### Single shot laminate build-up

## Summary

- When introducing Vacuum Infusion, osmosis and print through issues should get some special attention.
- Lantor Finishmat D7760 prevents osmosis by creating a resin rich layer.
- Lantor Soric TF blocks print through of fabrics and core of the constructive part of the laminate.
- The best Laminate surface finish will be achieved when Lantor Soric TF is used in combination with Lantor Finishmat D7760 to prevent:
  - o Osmosis
  - o Fibre print
  - o Fabric & core print
- Skin coat can therefore be left out when used for osmosis prevention or as a print through blocker.

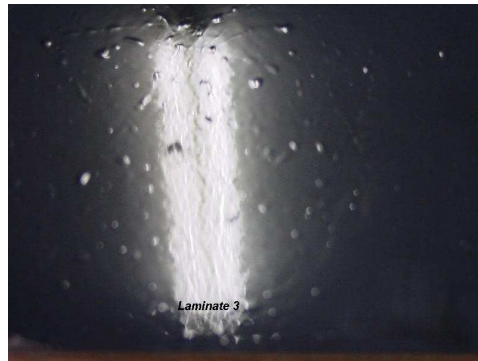
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## Appendix

The samples were submersed in distilled water of 60 °C during 5 weeks. The pictures below are taken after 2 weeks. There is quite a difference between the laminates. The Finishmat laminate has the best surface, than the skin coat laminate and the fully vacuum infused sample without D7760 has the worst quality after 2 weeks of submersion. All laminates were made in vacuum infusion, with Synolite 6811-N-1 DCPD resin

### Skin Coat



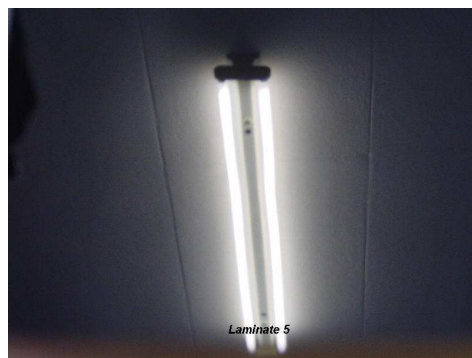
Gelcoat + skin coat 450 CSM | 450 CSM-Soric TF-2415-2415-Soric XF4-2415-2415\*  
|-> **Hand lay-up** | -> **Infusion**

### Fully infused (no D7760)



Gelcoat-450 CSM-450 CSM-Soric TF-2415-2415-Soric XF4-2415-2415\*  
|-> **Infusion**

### Fully infused with D7760



Gelcoat-D7760 450 CSM-450 CSM-Soric TF-2415-2415-Soric XF4-2415-2415\*  
|-> **Infusion**