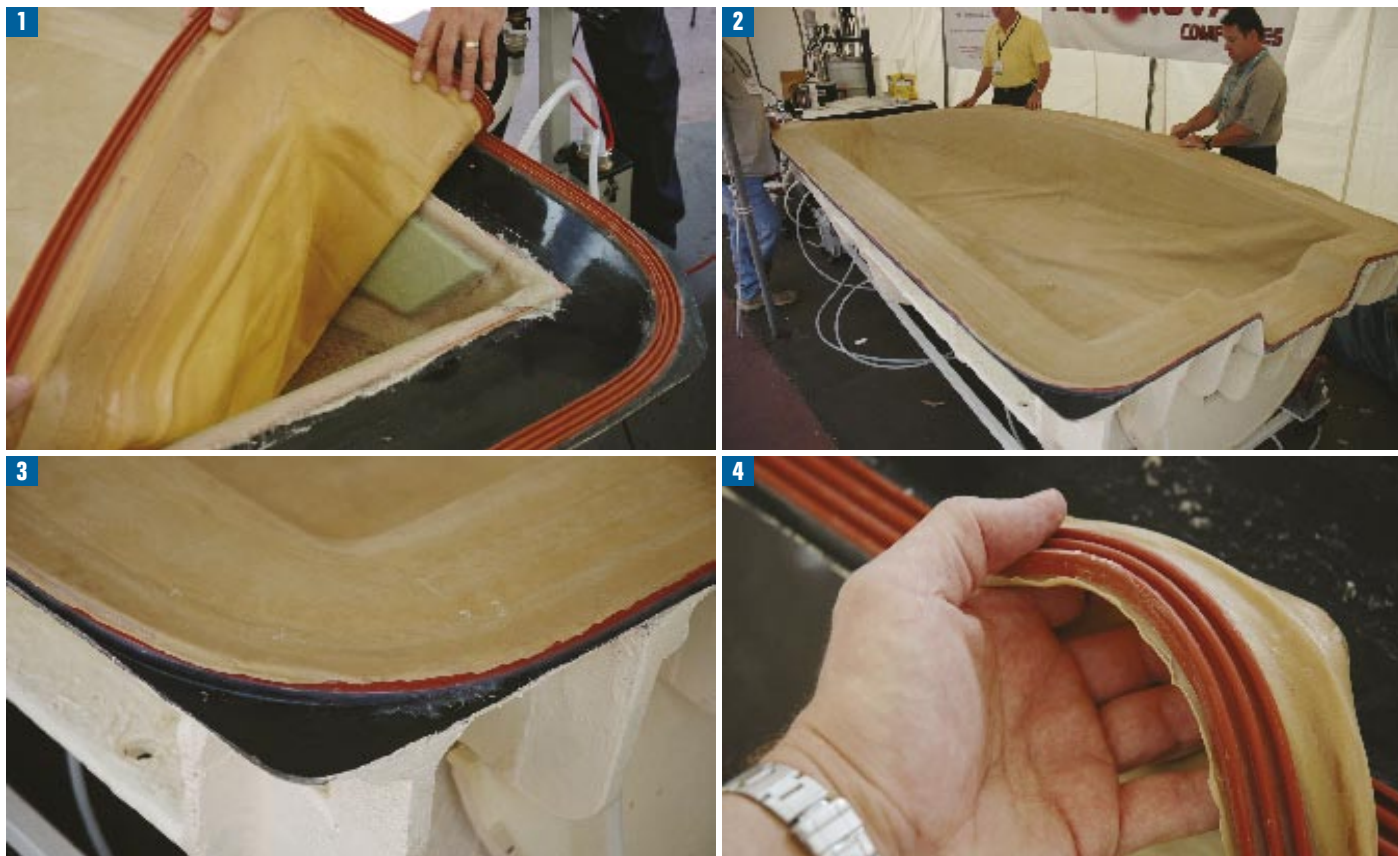


It's in the bag

US laminate system specialist SR Composites has come up with Sprayomer, a spray-on, light-but-durable vacuum-bagging system that is re-usable. There is a lot going for it, as we discovered at an IBEX 2007 demonstration.



US laminate system specialist SR Composites has come up with Sprayomer, an interesting re-usable vacuum-bagging system. The spray-on elastomer used to produce the light-but-very durable bags is what really makes the system. Part of the reason Sprayomer bags are so light is down to the fact that there is no silicone in this rubber-like material and no need for any reinforcements. That translates to a bag that typically would weigh one-third less than a silicone-based infusion bag. And lighter translates to easier handling.

This is interesting technology, not least for the fact that it makes for a relatively 'green' solution. A single-component product, the Sprayomer elastomer is water-based and so does not contain volatile organic compounds (VOCs) or any other hazardous air pollutants (HAPs) for that matter. Consequently no masks are required when spraying it and distilled water is used to clean up.

The material is compatible with most thermosetting resin systems and can

1, 2, 3, 4 & 5 The Sprayomer is a lightweight, durable and re-usable vacuum bag system. The spraying of multicoats of a proprietary elastomer formula into the mould creates the bag. The one for this 4.3m (14ft) hull took just a day to produce from start to finish and it required maybe 10-12 coats, which required some 170 litres (45 US gals) of elastomer; and no oven was used to accelerate the cure. A key part of the system is the seal, which is also re-usable.

withstand working temperatures greater than 177°C (350°F), more than enough for most marine industry requirements.

Generally to create a bag somewhere between 10 and 20 spray coats would be applied — depending on the application and the humidity. Being a water-based material, humidity affects dwell times between coats significantly.

A typical finished-bag thickness would be around 1mm (0.040in), perhaps a little thicker or thinner depending on the application.

The shrink rate of the product is only around 0.7-0.8 per cent. And going from ➔



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wet to dry tends to loose around 45 per cent of the weight of the product.

Once the spraying is done the finished bag should be cured within 24 to 48 hours. The end result is an elastic bag with nice elongation, so stretching it into position is relatively easy.

The Sprayomer technology is very robust and has been proven easy to adopt. Certainly the bag creation process is a lot less labour intensive than other methods and obviously using it requires a lot less skill, which makes for more worker flexibility. Using disposable bags is more complicated.

Depending on the type of application, the resins used, the care with which it is treated, working environments and so on, the bag should be good for anything from 50-200 cycles, and possibly more.

Should the bag get damaged or torn it is said to be very easily repaired.


Surface finishes should also improve with Sprayomer. For instance, there should be no creases at all with this system if bedded down correctly.

The Sprayomer technology was developed a couple of years ago, but is only now starting to be pushed towards the marine industry. One of the first users has been powerboat builder Formula Boats/Thunderbird Products in the States, but a dozen or so more boatbuilders over there are said to be trialling the system currently.

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Henderson, Nevada-based SR Composites developed the Sprayomer system and the QuickMold sprayer required to apply it. However, Ashland Distribution, a division of the resins and gelcoat manufacturer, has exclusive distribution rights for the marine sector for the technology.

As a rough guide to prices in the USA, a QuickMold sprayer weighs in at around US\$6,800 (€5,000) and the cost of the material is said to be very reasonable. The Sprayomer elastomer itself comes in 5, 30 and 55 US gallon (19, 114 and 208 litre) containers.

For more, check out www.ashland.com 



6 & 7 A demo at IBEX 2007 produced this dinghy hull. Using it is such a quick and simple process; and consumables are kept to an absolute minimum. The flow media used was supplied by Polynova, a combination of Hiflux 90 and Polybeam 703, and the core was Airex RG3 80 foam. The resin came from Ashland.