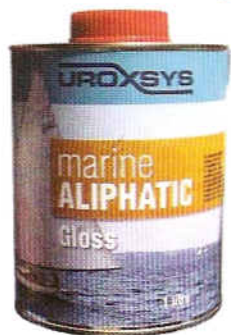


POLY PUTS THE FINISH ON



Flexible polyurethane, under the Coelan brand, performed brilliantly in our first woodfinish test. *Richard Hare* recounts his experience of using the product and its new competitor, Uroxsys



When we began our test programme in 2003 there was one flexible polyurethane (PU) woodfinish on the market, the German Coelan. It has been an outstanding performer to date – we gave it a distinction star over the only other four-star product, Novatech high solids exterior woodstain (reviewed last issue). But at £58 per m² applied it comes at a pretty amazing price too, though the cost is greatly offset by the length of time it lasts (still to be determined) and the associated saving in labour.

Recently a new market entrant arrived, Uroxsys from New Zealand. Uroxsys has continued to be under development over the past couple of years and the version of it on our second-series test rig (CB238) (without primer) has since been superseded. We're told that a Mk 2 formulation – a thicker version – is about to be launched and we hope to test this, along with its new primer, in our series three test, scheduled to start May 2009.

Both products are now supplied with a primer. Appearance-wise, given a light tint primer – like that supplied with Coelan – the finished product looks very like conventional varnish.

But here the comparison with varnish ends – flexible PU is thicker to apply, although Coelan can be thinned. Its performance, however, appears vastly superior to varnish.

In tandem with our UK test rig we've put flexible PU through its paces in the Mediterranean too, predominantly in Greece, in conditions of high salinity (which exterior woodstain and

woodsealer don't like) and strong UV (the Achilles' heel of conventional varnish). The flexible PU tested to date shrugs off both of these with equal ease.

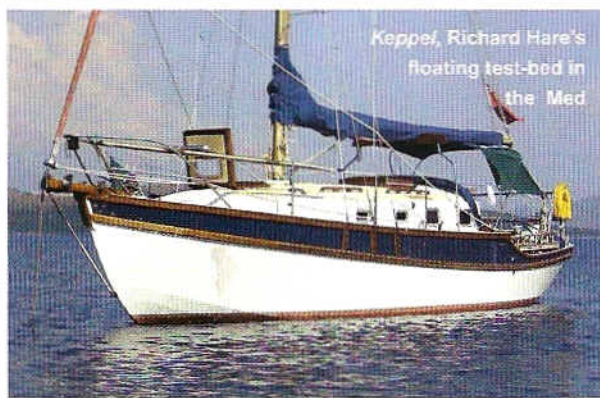
COELAN

Coelan application

Two coats of yellow tint primer (red and brown are also offered) and five of Boat Coating were applied to *Keppel's* bowsprit and lazarette hatch during May 2007. It went on easily and brushed out well.

The manufacturer recommends the end grain be given several coats of Boat Coating as additional primer. I confess that I didn't do this as I didn't think anyone else would. To my mind, it was going on thick enough anyway and I thought readers might be more interested to know whether we really have to be bothered. Time will tell, but two summers on and it's fine.

The Boat Coating needed 2½-hour intervals between applications, and it was here

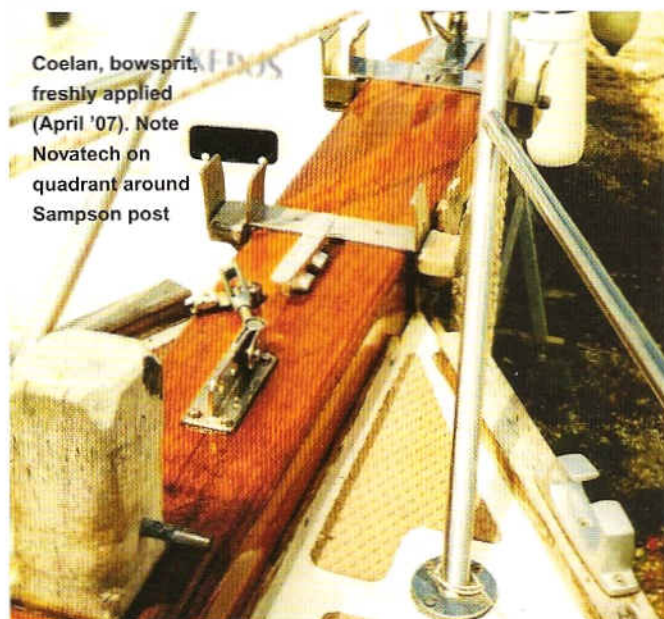




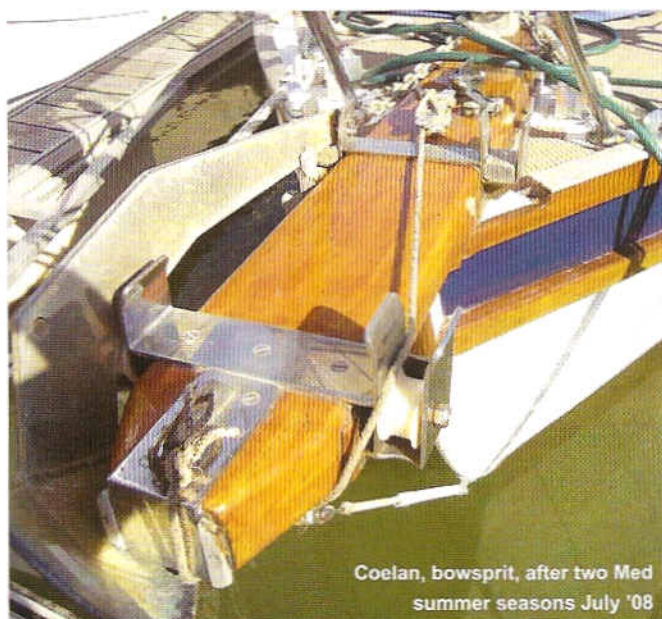
Coelan, lazarette, freshly applied april '07.....



..... and after two Med summer seasons, July '08



Coelan, bowsprit, freshly applied (April '07). Note Novatech on quadrant around Sampson post



Coelan, bowsprit, after two Med summer seasons July '08

that I hit a problem – we're told not to apply it in direct sunlight, something that is rather difficult to comply with in the Med... I made an effort to compromise by applying it in mornings and evenings. This meant it took me a lot longer than it would have on a single overcast day.

I chose to apply Novatech around the Sampson post because this area suffers a lot of chain abrasion and Novatech, with a shelf life that runs into years, is cheap and easy for effecting repairs.

I can't say that I enjoyed applying undiluted Coelan – it's rather like working with runny honey. With hindsight, it would have been better had I thinned it with a dash of Coelan thinners and then maybe apply an extra coat but, foolishly, I used up all the thinners just keeping my brush clean.

In future I will work with two brushes, cleaning them with antifouling thinners (I've been informed that No 3 thinners with a dash of methylated spirit does the business) and making sure that the one I'm using is bone dry when I start. They stress 'no solvents', other than their own, but I sense this applies more to the Boat Coating itself than to brush cleansing.

I experimented with 5 per cent dilution of thinners to Boat Coating and it made a lot of difference. I still had to drag the stuff on, but it did level well. The trick is not to fuss with it – it'll sort itself out. For a varnish-like finish it might be best to thin it (5 per cent) and de-nib a couple of coats, probably the second and fourth.

Our experience of the shelf life of Coelan, once opened, was between 6 months and a year.

The Coelan test – harsh enough?

The Coelan, unlike the other three products we Med-tested, wasn't applied to one of the lower strakes (because we didn't have one available). But we applied it to the bowsprit, where it would get a fair drenching not just from waves but from the wet anchor chain whenever it was regularly weighed, and to even things up I tipped a bucket of seawater over it periodically. An additional abuse that the others were spared arose from the (flat) bowsprit being used routinely as a gang-plank, as we moor bows-to in the Med, and, I confess, we seldom remove our shoes when we step

aboard. Coelan was also applied to the lazarette hatch – a location where we towel down on the aft-deck after swimming. So, quite a lot of cumulative seawater here.

Coelan performance:

Coelan not only took on the ravages of combined high salinity and strong mid-summer UV, but it looked no different after 18 months. Gritty shoes it shrugged off with indifference too. It had experienced a three-month mid-summer passage from the Greek Ionian to the South of France. This involved six weeks in the particularly high salinity Ionian and seven in the slightly less saline Tyrrhenian and Ligurian seas.

It then endured a wet and windy winter in the Golfe du Lion, followed by a cushy voyage through the inland waterway route from the Carmargue to the French Biscay coast.

Apart from one fissure – my fault, see below – its performance has been exceptional and worthy of its four-star rating, plus distinction star for suffering no significant visual deterioration during the four-year-plus test period.



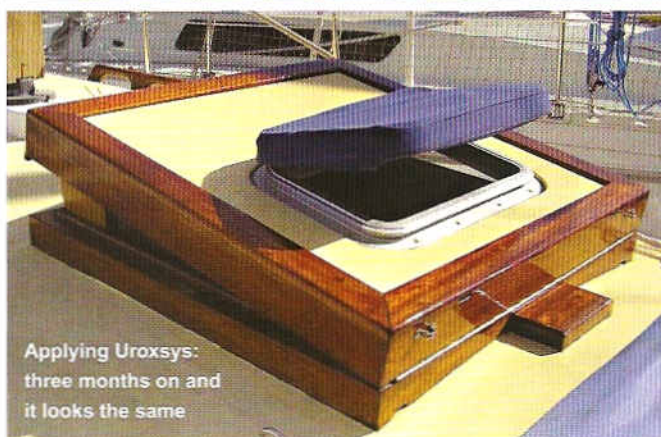
Applying Uroxsys:
masking up the hatch



Applying Uroxsys:
ragging on the primer



Applying Uroxsys:
top coats applied,
slice the bond
between the masking
tape and finish



Applying Uroxsys:
three months on and
it looks the same

UROXSYS

Uroxsys application

Keppel's forehatch was refinished using Uroxsys in May 2008 in the South of France. Unlike the test rig (CB238), we used the new primer as well. We selected the yellow tint because it was the lightest of the three offered and I'm very glad we did – it's still very dark, nutty as Novatech in fact. However, Uroxsys is about to launch a clear primer, which might be preferable.

All traces of the former finish were removed. Teak cleaner was then applied to remove areas of slight discolouration and then a final light sanding removed the fluffy bits that arose after the teak cleaner had dried. The preparation was concluded with a wipe over with a clean rag and acetone. (Cellulose spirit, my personal preference, could be used.)

Unlike Coelan, where two coats of primer were applied, Uroxsys calls for just one. We applied it by clean rag to ensure full contact with the microscopic wood surface. The surplus was then removed by rag too. It took five hours to dry; I was warned not to cut corners here as, if still wet, it migrates into the first layer of top coat and affects its cure.

Five coats of Uroxsys Marine Alphatic (top coat) were applied, about 45 minutes apart. It need only be touch dry. If applied 'wet on wet' sanding is not

necessary (same as Coelan) and, as a general rule, it can be left overnight so long as the last coat is in the late afternoon and the next one goes on earlyish the next morning. To be safe, abrade with 120 or 150G paper.

After the fourth coat it was suggested that we leave a good 12 hours to allow for a hard cure so that it could be de-nibbed with a light abrasive (120G) to level it before the final coat. I found this to be well worthwhile because there had been a lot bugs around while we were building up the system and they don't stand a chance of escaping once their feet touch the stuff. We can't lift them off with a brush as we can with conventional varnish. Alas, these poor fellows need to go crunchy before they can be removed by abrasion (bugs – block your ears...).

A spell of wet and windy weather put the fifth coat on hold but at least it saw off the bugs. When the time came it went on fine and levelled to a glass-like finish.

Before attempting to remove the masking tape, first slice it away using a sharp craft knife. Failure to do this may lead to the woodfinish peeling off!

Compared to Coelan, the Uroxsys was thinner and thus easier to apply. I imagine this would affect the overall 'build' of the system though. Does that matter? Don't know. Time will tell. We'll find out though.

Caution: I was assured that the Uroxsys 'brush cleaner' supplied would

halt cure altogether if it were added to the top coat. This is in stark contrast to Coelan's 'green light' for use of its 'thinner' to dilute their product. By implication this means that brushes cannot be left standing in Uroxsys solvent between coats. However, we found that if a brush was ragged dry (properly) we could re-use it to no ill effect but it must surely be better always to have two brushes on the go. Brush cleaning is also necessary when covering large areas as a brush will become progressively sluggish.

Our experience to date of the shelf life of Uroxsys, once opened, is that the test rig can is still usable 15 months later.

Uroxsys test – harsh enough?

No. The French inland waterways hardly present a challenge, but we anticipate Uroxsys (revised formulation) and Coelan will perform similarly and our test rig will indicate whether this is the case.

Uroxsys performance

Nor can we deliver a verdict on a product that has endured no more than two days of sea spray. It's too early, although the early summer UV has been strong in southern France. Meanwhile, on the test rig it's too early to tell whether it will become a CB 'pass' product. We'll need to wait until next spring but it's academic anyway as all eyes will be on the revised formulation.

Flexible polyurethane tips

1) Always decant Flexible PUs are moisture curing and the more humid the atmosphere, the faster they'll cure. By implication, users in humid climates may find themselves disadvantaged here, so extra care is needed. Coelan seems to be formulated to allow a longer working time, just over two hours in my experience. This being so we need to decant only the amount we need into a pot to minimise exposure of the stuff in the tin to moisture. Tins with a spout have to be better for this than an ordinary lid. They also reduce wastage as they pour better.

2) Shelf life Various tricks have been suggested for inhibiting rapid cure in the tin once it has been opened. A CB contributor claimed success by pouring Xylene onto the surface of Coelan Boat Coating and then clamping the lid closed, the clamp being essential to resist vapour pressure.

To remove moisture, Coelan guidance (it's an excellent booklet) suggests we shoot a blast of hot air from a hot air gun or a hair dryer into the tin before the lid slams shut. One of my chums told me he had a good result by pouring some Coelan thinners on top of the Boat Coating, and others will recommend a skin of cling film.

A Uroxsys spokesman claimed that we needn't expect problems in the original containers so long as exposure to the air is strictly controlled. So, open the tin, tip out the required amount, and reseal promptly. Emphatically, no tip-backs – this applies to both products. The spokesman told us that he has tins that last well over a year with intermittent use, and storing it in cool conditions will help.

PU problems PU is not entirely perfect however. Whereas exterior woodstains and water-based Woodsealer (Hydrosol) deteriorate by erosion from the outer surface back to the wood (making them easy to maintain), and varnish and 2-packs tend to

degrade by flaking off (making them more complex to repair), flexible PU is inclined to degrade by peeling off rather like a ribbon of thick cling-film. Let's keep this in perspective though – it is not insurmountable and I discovered it through the way I had applied it on the bowsprit of my boat *Keppel*.

A fissure had opened up where one of the stemhead roller

brackets screwed to the bowsprit interfaces with the woodfinish. If it was there when I left *Keppel* in late August 2007 I hadn't noticed. On my return in the following spring, May 2008, the fissure – and its consequences – were clearly apparent.

Winter rains in the South of France had exploited the fissure and the film had peeled back to form a sack as it detached from the wood. Rainwater had pooled beneath, hence the wood turning a weathered grey colour. This is

unlikely to lead to decay problems – particularly with iroko – but it's unsightly and undesirable.

The cause was simple really. In preparation for Coelan, I had removed all traces of the previous finish – good practice – but only up to the edge of the metalwork, which I'd left in place. What I should have done was remove all the fittings (ouf..!) and coat the bowsprit, tip to toe, including underneath the fittings. This would have avoided an open 'edge' which in retrospect was simply asking for trouble – a wound waiting to get infected. With an unbroken coating across the woodwork I could then have re-bedded the metalwork and would have been able to enjoy looking forward to years of maintenance freedom. Instead, I expect my problem will return to haunt me periodically in the future.

As I had some Uroxsys I decided to use it to effect a Coelan repair, and test generic compatibility. Six months later it was still fine. So the two proprietary products do appear to be compatible.



Coelan on the Dunkirk landings launch *Trimilia*, owned by David Jay

This is how we made the repair using flexible PU

1) With a scalpel or sharp Stanley knife slice away the loose flap from the sound, well-attached material. Cutting at an angle helps when it comes to the application of the fresh coating.

2) Assuming the wood below has become grey, damp and mouldy, apply a proprietary teak cleaning solution according to the instructions (mine was a Compass own-brand and it doesn't matter that we're not using it on teak). Allow to dry and then abrade it with 220 grade paper. Then abrade the surrounding sound woodfinish with a 120 grade abrasive.

3) Apply the primer according to manufacturers' instructions and then finish off with about five coats of topcoat, feathering each

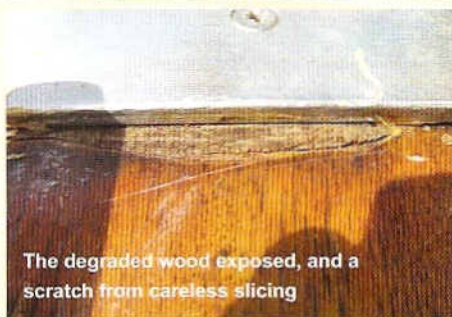
out onto the surrounding abraded woodfinish. I overcoated at 45-minute intervals.



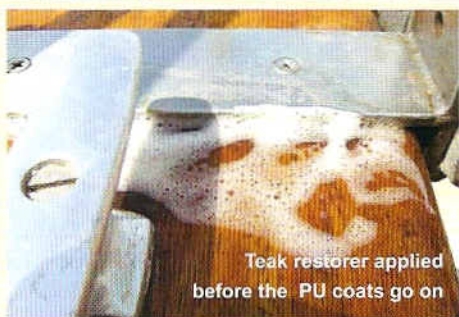
The problem: an open edge in the Coelan 'skin' against the metal fitting has become an infected wound



Slicing away the defect – cutting at an angle helps



The degraded wood exposed, and a scratch from careless slicing



Teak restorer applied before the PU coats go on