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PROJECT BOAT



Applying Coppercoat antifouling



Coppercoat is a water-based epoxy antifouling which can be used on all sizes of craft. David Parker applies it to a tender and describes the process

Coppercoat is a long-established antifouling which was first launched back in 1991, and like many boat owners I have seen the product exhibited at boat shows and have read reports about it.

When discussing it with others I've received mixed responses, ranging from glowing testimonials about its performance to more disparaging remarks about its appearance on a hull, with comments such as 'it looks like an old church roof.' I've read the brochures, but I thought the best way to find out more about it was to try it out myself. However, I didn't want to commit to the time, expense and extra labour involved in applying a new coating system altogether to my main boat where I use traditional antifouling.

Also, if I did use it on the big boat I would prefer to apply it myself, and I was wary about

using a new type of epoxy coating on a large scale. I have experienced how epoxy coatings can go wrong in the past for various reasons, and I didn't want my whole hull affected if there was a problem. However, my tender which is afloat most of the year on the River Hamble does suffer from heavy fouling which I regularly have to scrub off when I beach her. I have not used traditional antifouling on it because of the staining you get from both hard and soft varieties on hands, cloths and straps when car-topping the boat etc. What I wanted was an antifouling coating which was clean, effective and I could put on and forget about, and Coppercoat seemed an interesting option. Here was the ideal smaller project on which to try it out.

On further research, it transpires it is regularly used on smaller craft. The manufacturers told me it can withstand regular haul-outs, and unlike conventional antifouling paints it does not oxidise and deteriorate when out of the water. Currently it is used by manufacturers of craft such as Cornish Crabbers, Honnor Marine, Swallow Boats, Ribeye, Ribcraft, Drascombe Luggers, Plymouth Pilots and the Hawk 20. Being a water-

based epoxy it contains no VOCs (volatile organic compounds) so it is both environmentally friendly and doesn't give off strong solvent vapours when you apply it. It is sold in 1lt units, and one pack would be sufficient to treat my 2.4m (8ft) tender. The retail price for a 1lt unit is £70, plus £8.50 for delivery, plus VAT: a total of £94.20.

TOP TIP

When sanding down, cheap abrasive paper is a false economy and quickly disintegrates. A decent brand might be more expensive at the start, but it lasts so much longer that it works out more cheaply in the long run.

Preparation

As with any coating, preparation is the key, so the surface should be thoroughly cleaned prior to application.

Coppercoat can be applied directly to gelcoat provided that all paint, dirt, dust, grease etc is removed first. For wood, iron, steel, aluminium and ferro-cement an appropriate epoxy primer must be used before applying the Coppercoat.

On a larger craft, preparation often takes the form of using sand or slurry blasting carried out by a contractor. Here, a low-pressure compressor delivers high volumes of abrasive particles at a hull to remove previous coatings. My project would be on a more manageable scale, so once I had scraped off loose paint and contaminants such as the residue of stubborn barnacles etc I sanded down my hull with 120-grit wet and dry abrasive paper used wet. When clean, I left the hull to dry for a few days then wiped it down with isopropanol – don't use oil-based products or acetone for this job.



1 The first job was to thoroughly clean the hull and remove what remained of the old paint.



2 Masking tape was used to mark the waterline, and the gelcoat was then wet-abraded with 120-grit paper.



3 When dry, the hull was wiped down with isopropanol solvent – do not use acetone.

Mixing the gloop

I was told that to get even coverage and a smooth finish for this job, Coppercoat should be applied in five thin and equal coats.

All coats should be applied consecutively single day to ensure a satisfactory chemical between the coats. It was recommended to divide the pack into five equal parts, and for coat to mix 100g of epoxy with 100g of hardener and 400g of copper powder. This can be done by volume using containers, or in my case I pre-weighed the powder and put it into separate packets for convenience.

Because Coppercoat is water-based, the cure rate is affected by temperature, humidity and airflow. Therefore, it should not be applied if the ambient temperature is below 8°C. Ideally, the advice is to apply it on a warm day with a little airflow and a time gap of approximately an hour between coats. However, as I was coating my tender in winter I was able to bring it undercover in the garage and use heaters to raise the air temperature.



A litre pack of Coppercoat contains 500ml of hardener, 500ml of resin and 2kg of copper powder



1 The copper powder is very fine so it is easily absorbed into the epoxy mix.



3 For coating my tender I prepared five packs of copper powder each weighing 200g.



5 The mix can be calculated by volume, but here 100g of resin was weighed out into a clean, dry mixing pot.



2 On this small project, weighing out the quantities of copper powder beforehand helped when making up the resin mixes.



4 Short-pile rollers (shown) or high-quality foam rollers can be used for applying the Coppercoat.



6 100g of hardener was then added using digital scales.



Mixing the gloop – continued



7 The resin and hardener were mixed thoroughly before adding the powder.



8 The pre-weighed powder in individual bags speeded up the mixing process for each batch.



9 The powder has to be thoroughly mixed with the epoxy resin.



10 Each batch was thinned by 5% of isopropanol, so 5g of it was added.



11 It is important to regularly stir the mix to stop settlement of the copper powder.

Application – By roller, not brush

As soon as the two-pack epoxy is mixed to the correct ratios with the right amount of copper powder added and well stirred in, the coating should be applied.

Application should be by roller, not brush. Using short-pile simulated mohair or high-quality neoprene foam sleeves is recommended; however, I found that the short-pile rollers I used shed some small fibres. Where they came off they could be seen in the coating, which was frustrating. If you try to remove them before the coats are cured you can end up taking off all the epoxy as well. I would recommend using decent foam rollers to be on the safe side.

I found that as a water-based product, the coating went on more smoothly and easily than a traditional epoxy coating, but during application it is important to keep mixing it to prevent the heavier copper particles settling out. This is especially the case when coating a boat upside down as the particles might sink away from the surface. I'm told this can happen on bigger boats at the top of rudders, for example: people sometimes find growth where they have applied it more thickly and more fluid has allowed more settlement.

As I started, the first coat seemed patchy:



1 When first applied it initially might look patchy, but don't put it on too thickly.

but it is important not to put it on too thickly because, like metallic paints, it can have a tendency to run. It is better to build up the antifouling layer in thinner coats, and with further coats I found the thickness built up nicely. I would wait until the coating felt almost dry before applying the next one, and as it turns out I didn't get five coats out of the pack but just over four-and-a-half. When mixing the final coat, the ratios were amended accordingly by weight.

Cleaning up

Before the epoxy has cured, equipment can be cleaned in warm water. However, don't wash epoxy products into the water course or down drains. When cured it is an inert plastic, so trays and rollers can be disposed of in the normal way.

Once the coats are all completed the full cure takes place after five days, but the coating should apparently be cured sufficiently to launch after 72 hours at 20°C. As I was doing mine in the winter with colder temperatures I left it for seven days before moving the hull. When it was fully cured I then gave the hull surface a light burnish with a superfine Scotch-Brite pad to expose some copper.



2 Subsequent coats must go on as soon as the previous coat has cured, which was about an hour at 17°C.



3 The copper-coated hull complete. When finally cured, the surface was lightly burnished with a superfine Scotch-Brite pad to expose some copper.

Six months later



This is a picture of the boat after it had been in the water for six months and used constantly – so throughout the season – and I'm very impressed. Previously, the hull would have had very heavy fouling on it, but as you can see the only growth is on the aluminium keel bands, which I wasn't able to prepare in the same way as the rest of the hull. As I pointed out previously, the prep work is the key factor with epoxy.

Verdict



I found coating a small craft like this was a valuable way of learning about the product should you plan to tackle a bigger project with Coppercoat. Even with a small boat I found the antifouling to be effective over a six-month span and, having done it once, I would now feel more confident about taking on a larger boat. Meanwhile, I shall monitor its performance over a longer period.

■ Full application details come with the products, and more information is available from www.coppercoat.com.



Case study

Westerly Oceanranger 38

Boat name	Maaleesh
Location	Inverclyde
Treatment	Coppercoat® anti-foul applied 1996
Photo	October 2013 with owner
Verdict	The original treatment lasted 17 years. In 2014, Maaleesh was treated with Coppercoat® anti-foul for the second time.



Award winning anti-fouling Multi-season protection

Coppercoat® is the most durable and long lasting anti-foul coating currently available. Millions of boat owners world-wide are in the habit of lifting and re-painting their boats every year – Coppercoat® puts an end to this costly and time consuming exercise.

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