

The big antifouling test

All antifoulings are the same – or are they? We tested ten of them on readers' boats and came up with some surprising results. Report by Dominic Byers

It's easy to become confused by the sheer number of antifouling paints on the market. How do you choose one over another? What are the differences between them? Does high cost guarantee high performance? To find out the answers to these questions we decided to test a range of antifouling products.

Ten eroding antifouling's spent last season in the murky waters of the East Coast, South Coast and West Country. Those we have tested are merely a selection from a massive market – it was logistically impossible to apply this real life test to every antifouling product available.

The antifouling were applied individually to test boats at the start of last season, and to one boat that was divided into sections for a sample of each paint. The bow and stern sections of the hull were discounted from the test as waves and the prop may have an unfair effect on those areas. All of the antifouling products were applied according to the manufacturers' directions, and the boats were given two coats.

At the end of the season the boats were lifted or dried out for inspection and photographed. The results of the tests were based on the multiple test boat, *Sweet Lucy III*, which was painted with a sample of each antifouling. The



results of the other test boats were compared with these, ensuring that no disparity was overlooked.

Antifouling Facts

Antifouling must be strong enough to inhibit the growth of biofouling, which would otherwise reduce a boat's performance, without polluting the water beyond acceptable levels. It must be effective against a vast range of organisms such as protozoa, marine fungi, algae spores, limpets, barnacles and seaweed in a variety of conditions.

It must withstand the erosive forces of water, scrubbing, powerwashing and drying-out. And it should manage to do all this for at least one season.

Most antifouling paints are based on toxicants derived from heavy metals. Copper, or cuprous oxide, which is a copper compound, is found in varying quantities in many antifouling

products using binders to keep it in suspension. The copper acts as a biocide, the quantity of which, however, does not dictate the effectiveness, it simply indicates how long the antifouling will last. The effectiveness is dictated by the amount of copper that is released, or leached.

There are several types of antifouling paints. Ablative or soluble paints (also known as soft-eroding, self-polishing or co-polymer) work by slowly eroding and exposing copper, which then dissolves. The process is continuous, and therefore the thickness of paint determines its life.

Conventional paints, often known as hard antifouling, work differently. The paint itself does not erode. Instead the copper particles on the surface dissolve, to reveal new copper particles. These are designed for racing boats and are not included in our test. Copper-epoxy antifouling consist of copper powder suspended in epoxy; they are costly, but are claimed to last for many seasons. (See YM test feature next month)

It might be tempting to slap some highly-toxic paint on your hull that nothing would dare to come in contact with, but in today's climate this is not acceptable. Since tin-based TBT paints were banned over a decade ago, antifouling paints must conform to stringent regulations.

Biofouling is 'an undesirable accumulation of micro-organisms, plants and animals on artificial surfaces'. There are four stages to marine biofouling, the first of which occurs as soon as an artificial object is immersed. The surface rapidly accumulates organic matter, polysaccharides and proteins. Bacteria settle on this layer, forming what is known as a microbial biofilm, secreting chemicals that cause corrosion and eat away organic materials. The third stage involves the attraction of organisms such as protozoa, marine fungi and algae spores, which settle on the biofilm. Finally, invertebrates, such as limpets and barnacles, together with algae and seaweed, attach themselves to the surface creating a small, yet complete, community.

10 Antifoulings

Plastimo 1.2 Strong formula (Tester: Harrier 20, Chichester)

YACHTING
MONTHLY
AWARD OF
EXCELLENCE
★★★★★

★★★★★★★★★★★★

TYPE:	Self-polishing
THINNERS:	Plastimo thinner 7.1
MIN WORKING TEMP:	10°C
OVERCOATING:	2-4 hours
LAUNCHING - MIN:	3 hours
MAX:	6 months
MAX DILUTION:	10%
APPLICATION:	Brush, roller, spray gun
COVERAGE (m²/lit):	10

EASE OF APPLICATION:

Flows on well, but thinly. Light blue colour did not cover the grey subcoat first time round and still looked a little patchy on the second coat. A good paint for large areas if you need to do the job quickly – one of the shortest overcoating times, too.

BUILD-UP RATE:

Thin coats.

PERFORMANCE

Remarkably clean. Apart from the odd patch of very thin slime, which readily wiped off, the Plastimo was spotless. However, the remaining coat was thin, and would not last another season.



£47.19 per 2.5lit. Enquiries 023 80262211

**Veneziani Raffaello 3** (Tester: Stretched Telstar, Emsworth)

★★★★★★★★★★★★

TYPE:	Self-smoothing hydrophilic
THINNERS:	5470
MIN WORKING TEMP:	Unspecified
OVERCOATING:	2 hours
LAUNCHING - MIN:	12 hours
MAX:	60 days
MAX DILUTION:	5%
APPLICATION:	Brush, roller
COVERAGE (m²/lit):	8

EASE OF APPLICATION:

Goes on well, but be wary of reworking the coat after it has been applied – it tends to drag (wet edge time is short).

BUILD-UP RATE:

It gave a good, thick coat with good obliteration of the grey subcoat.

PERFORMANCE

Thick layer of slime, but no other growth. Slightly less fouling than on International's Micron Extra, but more than on Awlgrip's Gold Label. The residual coat was not particularly thick.



£59.99 Raffaello 3, £98.99 Extreme 2 (per 2.5lit). Enquiries 01937 586311

**Flag Flagship** (Tester: Dufour 30, Haslar)

★★★★★★★★★★★★

TYPE:	Self-polishing
THINNERS:	Flagship thinner
MIN WORKING TEMP:	Unspecified
OVERCOATING:	6 hours
LAUNCHING - MIN:	12 hours
MAX:	2 months
MAX DILUTION:	Unspecified
APPLICATION:	Roller, brush, spray
COVERAGE (m²/lit):	10

EASE OF APPLICATION:

This was the best product to use with a good balance between easy application and film thickness. It flows out well and is easy to work. Colour was reasonably even after first coat.

BUILD-UP RATE:

One of the best

PERFORMANCE

Moderate layer of slime without any other growth. Residual coating was also moderately thick, but would need re-coating for another whole season.



£35.99 per 2.5lit. Enquiries 01621 785173. Free delivery within 48 hrs

**Blakes Tiger Cruising** (Tester: Hustler 35, Falmouth)

★★★★★★★★★★★★

TYPE:	Medium/high strength eroding
THINNERS:	Blakes No 3
MIN WORKING TEMP:	5°C
OVERCOATING:	6-11 hours
LAUNCHING - MIN:	6 hours
MAX:	3 months
MAX DILUTION:	10%
APPLICATION:	Brush, roller, pad, spray
COVERAGE (m²/lit):	10

EASE OF APPLICATION:

A well proven product which was easy to apply and gave a good, even coating even after the first coat. With the Flag, voted probably the best for application.

BUILD-UP RATE:

Good.

PERFORMANCE

Quite a thick layer of slime that was easily removed, and no other fouling. The residual paint was quite thin, and would need re-coating.



£56.95 per 2.5lit. Enquiries 023 80636373

**Awlgrip Awlstar Gold Label** (Tester: Bénéteau Océanis 390, Dartmouth)

★★★★★★★★★★★★

TYPE:	Self-polishing
THINNERS:	T-0101
MIN WORKING TEMP:	Unspecified
OVERCOATING:	5 hours
LAUNCHING - MIN:	5 hours
MAX:	Unlimited
MAX DILUTION:	10%
APPLICATION:	Brush, roller, spray, pad
COVERAGE (m²/lit):	12

EASE OF APPLICATION:

Went on well but first coat dried patchy - mix of gloss and matt - but covered well and appeared to be building up a good coat thickness. Second coat dried much more evenly.

BUILD-UP RATE:

Good.

PERFORMANCE

Thick layer of slime, no other fouling though, and good residual coat that would last another season.



£84.60 per 2.5lit. Enquiries 023 8033 0208 (Marineware)



International Micron Extra (Tester: Scanmar 33, Hamble)



TYPE: Extra Strength self-polishing
THINNERS: International Thinners No 3
MIN WORKING TEMP: 5°C
OVERCOATING: 4-16 hours
LAUNCHING - MIN: 12 hours
MAX: 12 months
MAX DILUTION: Not recommended
APPLICATION: Brush, roller, spray, pad
COVERAGE (m²/lit): 10

EASE OF APPLICATION:

Very good obliteration and film build-up, but quite heavy to apply. Probably the best performing for application, but not the easiest to use. It was significantly harder to apply on the second day when the temperature was higher.

BUILD-UP RATE:

Very good. Nice, even colour, even after first coat.

PERFORMANCE

Consistently thick build-up of slime, no other fouling though, and residual coat is one of the best. It should easily last another season.



£76.95 per 2.5lit. Enquiries 023 8022 6722



MBM Giraglia (Tester: 6 Ton Hillyard, R. Arun)



TYPE: Extra strong eroding, hydrophilic
THINNERS: No 110
MIN WORKING TEMP: 5°C
OVERCOATING: 12 hours
LAUNCHING - MIN: 24 hours
MAX: 4 months
MAX DILUTION: 3%
APPLICATION: Brush, roller, spray
COVERAGE (m²/lit): 9

EASE OF APPLICATION:

Went on thickly, a bit like Micron, with good coverage and obliteration. Slightly easier to work than Micron.

BUILD-UP RATE:

Very good.

PERFORMANCE

A thick coating of slime with a fine tracery of an algae evident. The residual coat may last another season.



£67.75 per 2.5lit. Enquiries 01590 681 751



Jotun Nonstop (Tester: Vertue 26, Hamble)



TYPE: Self-polishing
THINNERS: Jotun No 7
MIN WORKING TEMP: Unspecified
OVERCOATING: 8 hours
LAUNCHING - MIN: 8 hours
MAX: 3 months
MAX DILUTION: Not recommended
APPLICATION: Brush, roller, pad, spray
COVERAGE (m²/lit): 10

EASE OF APPLICATION:

Black colour obliterated grey very well. Easy to apply and flowed on well. The fumes from this product were really nasty by comparison – could be a problem for some people.

BUILD-UP RATE:

Good.

PERFORMANCE

Quite clean, although there was a covering of slime and what looked like worm casts, it all came off when power washed.



£65.39 per 2.5lit. Enquiries 020 7481 2741



Seajet 033 (Tester: SCOD 8m, Brighton)



TYPE: Self-polishing
THINNERS: Seajet thinner A
MIN WORKING TEMP: 0°C
OVERCOATING: 5-12 hours
LAUNCHING - MIN: 12 hours
MAX: Unspecified
MAX DILUTION: 5%
APPLICATION: Brush, roller, pad, spray
COVERAGE (m²/lit): 9

EASE OF APPLICATION:

Very easy and quick to apply, giving reasonable coverage and a very good finish. A little thinner than other antifouling.

BUILD-UP RATE:

Fair

PERFORMANCE

Extremely clean with only sparse patches of slime, which came off easily, leaving a good residual coat of antifouling that should last another season.



£49.95 per 2.5lit. Enquiries 020 7839 1818



Teamac D-Type (Tester: Hustler 30, Langstone)



TYPE: Self-polishing
THINNERS: V/607/17
MIN WORKING TEMP: Unspecified
OVERCOATING: 3-18 hours
LAUNCHING - MIN: 12 hours
MAX: 2 weeks
MAX DILUTION: Unspecified
APPLICATION: Brush, roller, spray
COVERAGE (m²/lit): 10

EASE OF APPLICATION:

Went on quickly and quite thickly.

BUILD-UP RATE:

Good.

PERFORMANCE

Apart from a thin skirt of weed along the waterline, which

YACHTING

MONTHLY AWARD FOR VALUE FOR MONEY

could easily be brushed off, there was only the odd patch of fouling, and very little slime present.



£34.00 per 2.5lit. Enquiries 01502 712 311 (Traditional Boat Supplies)



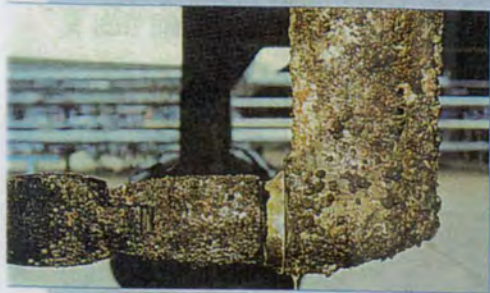
ALLOY/STEEL HULLS, OUTDRIVE LEGS AND PROPS

Copper-based antifoulings should not be applied directly to steel hulls, aluminium outdrive legs or bronze propellers unless the metal surface is primed and treated with several coats of a barrier paint beforehand.

An exception to the rule is International's Trilux, which uses the non-stick properties of Teflon to prevent biofouling attaching to the hull, and can be applied directly to alloy hulls. Products available for use on outdrives include Blakes's Linx and International's Veridian, which is biocide free and classed as an easy-clean coating, not an antifouling.

Propellers are another story. If the engine is used frequently, the high-speed revolutions should dislodge anything foolish enough to hitch a ride, but if the boat sits around, unused for long periods, barnacles and limpets will seriously reduce the performance and could produce vibration.

The propeller requires both a thin, high-adherence primer and hard antifouling, which must not contain heavy metal components. These coatings must be as thin as possible, so as not to alter the profile and pitch of the prop. Veneziani has a good range of products especially for use on propellers, shafts and outdrive legs.



The verdict

Although the antifouling paints we tested performed differently, it would not be fair to put too much emphasis on one being markedly better than another. None of the antifoulings performed badly; indeed, all did the job for which they are intended. A thin coating of slime will not reduce a boat's performance in a cruising context.

Weed, limpets and barnacles, however, would be detrimental to performance, but, apart from a slight skirt of weed on the waterline that may have been due to a very thin coating of antifouling on the boot top, all of the antifoulings were effective against them. However, the rate and level of biofouling depends very much on water temperature, salinity, flow, sunlight, and levels of phosphates and nitrates.

An antifouling which performs well in one situation will not necessarily

perform as well elsewhere. While the results don't reveal a huge disparity between the antifoulings, there are a couple of trends worth noting. The Solent, in general, does not suffer from high levels of fouling.

Flag's Flagship, which is second to none for application, and Teamac's D-Type antifouling, both retailing at about £35 for 2.5 l, represent excellent value for money, and do as good a job, if not better, than antifoulings costing more than twice as much. The 'premium' products, as a whole, did not perform as well as the less expensive, and perhaps less well known brands. Nevertheless, while the premium products tended to have a thicker residual coat, that would probably last for another season, the less expensive products would require re-coating.

Not having had a second year in which to test whether the premium

products would perform throughout another season, we cannot state whether, in the long term, they would out-perform the less expensive brands, and offer better value for money.

All we can say is that each antifouling was applied as two coats, and if you antifoul at the beginning of every season regardless, it is not worth spending the extra money on the more expensive products. If you want the cleanest bottom in town, Plastimo performed remarkably well, but beware for it is also the thinnest, standing-up neither to the rigours of drying-out nor to more than a season in the water.

If you're looking for a hardy antifouling that is likely to last for a couple of seasons, International's Micron Extra had a good residual coat, as did Awlgrip's Gold Label, MBM's Giraglia and Seajet's 033. The latter is an excellent all-round antifouling, offering outstanding performance coupled with easy application, and all for £49.95.

However, if your boat is wintered on hard-standing, manufacturers recommend that you apply fresh antifouling before re-launching, except for Awlgrip, whose Gold Label antifouling is claimed to remain effective, regardless of time laid-up. ▲

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NEXT MONTH:

Don't miss part 2 - Copper epoxy antifouling agents tested in *YM* April.

