

Test Panel Pageantry: 29 Paints, 1 Year Later

Practical Sailor checks in on our long-term topside paint tests, including the dinghy project, the exposure panel test, and the test-boat fleet coatings.

Testing confirms it: There are no shortcuts for DIY topsides job.

Last year, we launched a multi-phase topside paint evaluation in search of a high-gloss, easy-to-apply, durable coating for fiberglass hulls. We began in the August 2008 issue with a close look at application characteristics including handling ease, coverage, and gloss. This report moves the test into the next phase: performance at the one-year mark. Here, we'll take a look at the long-term paint panel test after one year with an inspection of the paints' hardness, gloss retention, and the abrasion resistance of each of the products tested.

Depending on the type of topside paint used (and where the boat lives), a DIY topsides job can be expected to last one to five years. *Practical Sailor's* last long-term topside showdown stretched on for four years with Interlux Toplac (white), and Epifanes' mono-urethane (blue) and polyurethanes (blue and red) getting the all-star accolades in the May 2006 finale. A few coats of paint do wonders for a boat aesthetically, but they also protect the hull.

WHAT WE TESTED

Among the 29 paints we're testing are seven enamels, 12 one-part urethane modified enamels (mono-urethanes), eight two-part linear polyurethanes (LPUs), and two water-based coatings.

We tested multiple white paints and a handful of colored ones. Because reflectivity and gloss could be measured consistently among the white paint test panels, the white paints were evaluated on four characteristics (hardness, abrasion and stain resistance, and appearance).

However, colors are influenced by their hue and the rate at which their pigment absorbs light, so testers used only two of the four testing criteria (hardness and appearance) to compare the colored paints. But each brand's white paint uses the same base chemistry as the color versions of the product, so we do get a measurement that's transferable—to some extent. (See "How We Tested," page 15.)

WHAT WE FOUND

After 12 months exposed to the New England elements, the majority of the

test field was holding up admirably. Testers were pleased with how well the mono-urethanes maintained their luster, however, the two-part Interlux Perfection and Epifanes Polyurethane continue to outshine them, and the professional favorite, the two-part Awlgrip LPU, topped the performance charts.

As might be expected, the two-part cross-linking paints were harder, glossier, and more stain-resistant, but their application was also more difficult to control.

After a year of weathering, all coatings remain well stuck on the epoxy-primed test surface. Even the water-based Crabcoat paints showed no sign of chalking or adhesion problems.

ENAMELS

Softer enamels can be expected to deliver about a season of shine. They typically oxidize a little over winter, and by spring, are ready for a light scuff sanding and a rejuvenating coat of alkyd enamel.



A piece of masking tape can be used to lift larger critters (mosquitoes) from still-wet paint.

Products like Z-Spar 100 and semi-gloss 101 and Interlux Premium Yacht Enamel were easy to apply. Testers also were fond of the excellent coverage characteristics of Sherwin-Williams Seaguard 1000, Kirby's Hull and Deck Enamel, and Z-Spar's 1195. All are reduced with mineral spirit-based solvent and are soft enough for easy sanding between coats.

After the year-long exposure test, we did notice that the enamels had lost much gloss, and Kirby's gloss white and semi-gloss white were closer in reflectivity than they were a year before.

The enamels fared as well as was expected with most of the paints rating

“Fair” or “Good” in performance tests.

Bottom line: For a single-season paint, go with an easy-to-apply enamel. Sherwin-Williams topped the white enamels, while Pettit Z-Spar Grand Banks Beige outranked the colored enamels.

MONO-URETHANES

The harder one-part urethane-modified enamels are glossier, tougher coatings that look a lot like their two-part cousins but handle more like enamels. They are faster-drying paints and must be carefully thinned with specific reducers to retain good flow characteristics.

Interlux's Brightside, Pettit's Easy-Poxy and Insignia's Resilience rated high for ease of handling.

The high scores of some of the other mono-urethanes in the “appearance” test were derived from their even flow and user friendliness. In fact, our tes-

ters really liked the semi-gloss softer appeal of some of the one-part paints. (Several were rated “Very Good” for appearance.)

Bottom line: Mono-urethanes are middle-of-the-road coatings, as far as application ease and durability. Recommended one-parts after one year are Interlux No. 4359 and K184, Pettit No. 3706 and 3175, and West Marine Sea Gloss Pro white.

TWO-PART LPUs

The two-part linear polyurethane (LPU) products we tested were the glossiest of the test-panel bunch, but they also were the hardest to handle. They cured with a wet look that packed an automotive showroom brilliance. However, the downside of this high-reflectivity is the need for a smooth, dust-free application, and the extra effort associated with surface prep.

All of the two-part products we test-

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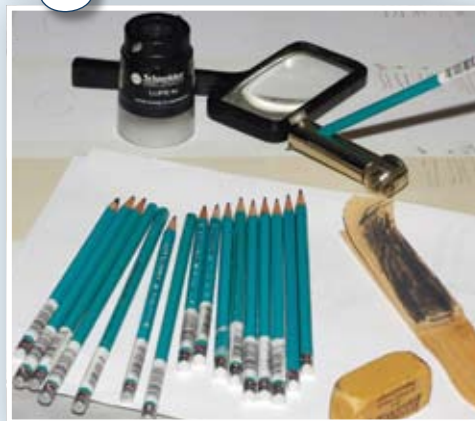
Our long-term testing includes a few head-to-head matchups on our test-boat fleet, including a look at deck re-dos with one-part versus two-part paints on Technical Editor Ralph Naranjo's Ericson 41 (left) and Cape Dory Typhoon 19 (bottom). A check-up at the three-year point found the Interlux mono-urethane Brightside holding up well on the Cape Dory deck and Interlux Perfection doing very well on the Ericson deck. Both projects used a combination of Interlux nonskid compound mixed in the paint as well as salt-shakered over the wet coatings. The grip remains tenacious, but the surface is not as abrasive as coarser-grit nonskid products. The bottom line is that the more highly trafficked the surface, the more likely a two-part product will pay off in the long run.



Photos by Ralph Naranjo



To rate the overall appearance of a paint panel after a year, testers evaluated the coating's color evenness, gloss, and surface texture.



Paint Panel Performance Tests

For 12 months, our test panels have been exposed to the elements 24/7, facing all four seasons of a Mid-Atlantic climate cycle. Treating the surface like any hull in a boatyard, we washed the panels with boat soap and a soft sponge. No abrasive cleaner, scrub brushing, or strong solvent entered the equation, but we did use a mild, non-abrasive mold cleaner on half of the surface. With each test-paint stripe coded for blind evaluation, testers conducted a series of bench tests after a year. All were scored on a scale of 1 (low) to five (high).

1 APPEARANCE

Appearance scores included three variables and their combined effect. Color evenness is fairly self explanatory; higher marks were gained by products that showed no sign of streaking or variation in tone or hue. Gloss after one year was another rating. (Here, the two-part paints dominated.) Lastly, we rated the texture of the surface; products with smooth, even finishes ranked higher than those with more uneven surfaces.

2 HARDNESS

To determine the relative hardness of each coating, testers employed Gradco's pencil hardness test method. The process involves a roller device that holds a pencil at a given angle as it is pushed across the surface of the coating sample. By using pencil leads of varying hardness, the coating was finally scratched, and testers recorded the lead hardness at which the coating allowed a scratch. We found that all paint samples fell within the following pencil hardness

range: HB (softest), F, H1, H2 (hardest). For ease of reporting we shifted to a points scale (1-5, with 5 being the best).

Tests were repeated five times. A jewelers' loupe and magnifying glass allowed testers to scrutinize the results at 4-10 power magnification.

3 ABRASION RESISTANCE

Testers used Scotchbrite scuff pads to evaluate the coatings' abrasion resistance. They applied a consistent 3 pounds of pressure to each pad and moved it five times over a 3-inch span. The amount of residue left on the pad indicated how abrasion prone the coating was. Not surprisingly, there was a fairly consistent correlation between hardness and abrasion resistance.

4 STAIN RESISTANCE

The most common hull stain is what many refer to as the ICW moustache or waterline stain. The culprit behind the Intracoastal Waterway staining is tannic acid. In the natural environment, it is linked to tree roots, leaves decaying in the water, and other botanical growth.

To mimic the effects of tannin-rich waters on a boat's topside paint, testers applied amounts of tea, which has tannin, to the paint panels. One drop of tea was left on panel for 30 minutes and a second for an hour and a half. A dampened sponge was used to wipe off the residue, and any sign of a ring or fuller stain was noted.

TOTAL SCORE (WHITES)

The white paints were evaluated on all four of the above performance characteristics, but only two (hardness and appear-

ance) were used to compare the colored paints. One of the reasons we stuck to white paints for the most in-depth part of the test was that warm and cool tone colors raise preference over hues that are aesthetically based and very subjective.

The total score listed in the table is the actual numerical final score the white coatings earned. (See Value Guide, page 16.)

AS VALUE GUIDE TOPSIDE PAINTS ONE-YEAR CHECKUP

TYPE	BRAND	PRODUCT	COLOR	PRICE (QT)	INITIAL GLOSS	HARDNESS at 1 year	ABRASION at 1 year	STAIN at 1 year	APPEARANCE at 1 year	TOTAL SCORE (WHITES)
ENAMELS	Kirby's	Hull and Deck	No. 25 Light Gray	\$40	Good	Good	NT*	NT	Fair	NA
		Hull and Deck	Gloss White	\$40	Good	Good	Fair	Very good	Good	12
		Hull and Deck	Semi-Gloss White	\$40	NA	Good	Fair	Good	Very good	12
	Sherwin-Williams	Seaguard 1000	White	\$30	Good	Good	Good	Very good	Very good	14
	Pettit Z-Spar	No. 100	Gloss White	\$20	Good	Good	Good	Fair	Good	11
		Marine Enamel	No. 1195 Grand Banks Beige	\$25	Good	Good	NT	NT	Excellent	NA
		Solid Coat	No. 99 Gloss White	\$20	Good	Good	Fair	Good	Very good	12
ONE-PART URETHANES	Epifanes	Mono-urethane	White	\$34 (750 ml)	Good	Good	Very good	Poor	Very good	12
		Mono-urethane	No. 3212 Gray	\$34 (750 ml)	Good	Good	NT	Good	NT	NA
	Insignia	Resilience	No. 9012 White	\$31	Good	Good	Very good	Good	Very good	14
		Resilience	No. 3105 Fighting Lady Yellow	\$48	Good	Good	NT	Very good	NT	NA
	Interlux	Brightside	No. 4359 White	\$25	Good	Good	Very good	Excellent	Good	15
		Toplac	No. K184 Mediterranean White	\$41	Very good	Good	Very good	Very good	Very good	15
		Brightside	No. 4190 Kingston Gray	\$25	Good	Good	NT	Very good	NT	NA
		Brightside	No. 4247 Sea Green	\$25	Good	Fair	NT	Very good	NT	NA
	Pettit	EasyPoxy	No. 3706 Pearl Gray	\$28	Good	Good	NT	Excellent	NT	NA
		EasyPoxy	No. 3175 White	\$28	Good	Good	Very good	Very good	Very good	15
		EasyPoxy	No. 3518 Sandtone	\$28	Good	Good	NT	Very good	NT	NA
	West Marine	Sea Gloss Pro	No. 5437116 White	\$35	Very good	Good	Very good	Good	Very good	15
	TWO-PART URETHANES	Awlgrip	Linear Polyurethane	No. 8010 Off White	\$213 (gal.)	Excellent	Excellent	Excellent	Excellent	Excellent
Epifanes		Polyurethane	No. 814 Yellow	\$65/ qt. kit	Excellent	Very good	NT	Very good	NT	NA
Fabula		Signature	No. 40B Red	\$560/ 8-qt. kit	Excellent	Very good	NT	Good	NT	NA
		Signature	White	\$560/ 8-qt. kit	Excellent	Very good	Very good	Excellent	Very good	17
Insignia		Brilliance	No. 1085 Red	\$96/ qt. kit	Excellent	Very good	NT	Good	NT	NA
		Brilliance	No. 3064 Federal Yellow	\$107/ qt. kit	Excellent	Very good	NT	Good	NT	NA
Interlux		Perfection	YHS056 Yellow	\$73 / qt. kit	Excellent	Very good	NT	Excellent	NT	NA
Sherwin-Williams	Pro-Line	Marine Red	\$122 / gallon kit	Excellent	Very good	NT	Good	NT	NA	
OTHER	CrystaLac	Crab Coat	White Gloss	\$45	Good	Very good	Good	Good	Fair	12
		Crab Coat	Mystic Green	\$45	Good	Very good	NT	Fair	NT	NA

Recommended white paint Recommended colored paint

*NT: Not tested; see "How We Tested," page 15, for explanation

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ed proved to be harder to brush on than the single-part paints. Interlux Perfection and Epifanes Poly-Urethane—both yellow paints in the panel test—came closest to the white Awlgrip’s deserved pick-of-the-pros status. Our real-world testing of the Epifanes and Interlux white LPUs support this finding as well, but testers tapped Perfection as tops for DIY application. (See “DIY Notebook,” page 18.)

Bottom line: If you’re looking to get the longest life possible out of your topside makeover—and can tolerate the added work of applying a two-part LPU—we suggest the Fabula, Awlgrip, Interlux, or Epifanes.

CONCLUSION

When choosing the best paint for a boat’s topsides, be sure to consider the

level of protection expected. If an owner plans to freshen up the paint annually, applying a two-part urethane would be overkill and a waste of money.

Conversely, the inexpensive, super-easy to apply enamel paints can’t be expected to last as long as LPUs. Paint

choice comes down to what will meet the boat owner’s needs and skill for flowing on paint.

All of the paints recommended at the one-year mark are quality paints. Stay tuned to see how they fare at the next checkup, to be reported fall 2010. ▲

CONTACTS	
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EPIFANES , 800/269-0961, www.epifanes.com	SIGNATURE FINISHES (FABULA), 772/287-6077, www.signaturefinish.com
INSIGNIA COATINGS 888/386-6342	WEST MARINE , 800/685-4838, westmarine.com
GEORGE KIRBY JR. PAINT CO. www.kirbypaint.com	

TIPS & TECHNIQUES

Wax On, Paint Off?

Practical Sailor gets many reader inquiries about ways to extend the life of their LPU coatings. One of the most common questions is whether to use wax products and other shine restorers like Poli Glow acrylic coating. Although most gloss restorers will not damage an LPU coating, we always caution against using them in the year or so prior to any planned topsides paint job as the residue of such coatings can have catastrophic effect on future paint work.

Deliberately ignoring our own advice in order to test this, we coated the bottom of a carbon-fiber epoxy-resin windsurfer with an LPU. The surface had been wet-sanded and Turtle-waxed for several years, but prior to painting it, the surface was de-waxed with Interlux 202 and then wiped with acetone and numerous clean cotton cloths. The surface was sanded with 320-grit wet-dry paper, and after another solvent wipe-down, the LPU coating was sprayed on. The flow out was even, and there was no sign of fisheyes, orange peel, or other surface imperfection, other than a couple of bugs that landed and failed to take off.

The LPU finish cured typically with a superior gloss. Two months after the paint had been applied, it began to lose adhesion, and at the one-year point, about 20-percent of the surface had failed due to poor adhesion.

With a sharp putty knife and razor blade, the remaining 80-percent of the coating was removed. Rather than repainting the surface, testers wet-sanded down to 1,200 grit and machined buffed the epoxy resin to a high gloss. Another paint



Despite basic pre-painting prep and de-waxing, the LPU lost adhesion shortly after application.

application will be tried, but this time after more de-waxing, sanding the surface to 80 grit, applying epoxy primer prior to more sanding, and applying an LPU finish.

Bottom line: If you have any plan to paint the topsides of a boat, avoid waxing it or using acrylic coatings on it, unless you’re prepared to go the extra mile in prepping for the LPU.

The easiest way to extend the life of your enamel or urethane coating is to keep it clean. Saltwater left to dry on the surface will turn to tiny salt crystals that become magnifying glasses, intensifying the sunlight and causing UV damage—not to mention the sandpaper effect. Rinsing the boat with fresh water as often as possible will keep salt crystals from forming.



With practice and patience, an amateur DIYer can spray on a glossy Awlgrip coating.

Practice Projects Fare Well After a Year

Sometimes it's good to take your own advice, and in the August 2008 issue, we suggested would-be DIY topside-painters do a few practice projects before tackling a big paint job like the freeboard of a boat. We advised readers to "paint a pair of oars with quality enamel, then paint the inside of a dinghy with a one-part urethane and finally flip it over for a trial run with two-part LPU paint." It sounded like such a good idea, we added a dinghy and oar makeover to our to-do list. And we figured no one-year checkup would be complete without an update on our practice projects.

WOOD OARS: ENAMEL

Testers brushed Pettit Z-Spar 100 (white) on a pair of often-used wooden oars. We discovered that traditional alkyd enamel is a user-friendly product that covers well,

sands easily, and delivers a very nice initial shine. It likes to be spread over a well-adhered primer, and it tends to keep a wet edge longer than higher-tech coatings, making it a forgiving paint product that can be repaired easily.

Part of enamel's appeal is that it doesn't look like the surface of a new automobile, so flaws from application or use are less glaring than with a urethane. After a year of staying stuck to the oars, the Z-Spar coating had a few chips from physical contact and a slight bit of lifting near the very edge of the handle where bare wood meets the painted surface. All-in-all, the coating remained intact, and though less glossy than it initially was, the Z-Spar still held plenty of aesthetic appeal.

DINGHY INTERIOR: MONO-URETHANE

The inside of a rigid dinghy takes a lot of abuse, and the Interlux Brightside mono-urethane we used took the wear and tear in stride. The paint was roll-and-tipped over Interlux 404/414 epoxy primer, a durable high-adhesive undercoat that refuses to let go of the surface it is applied to.

The Brightside finish got a solid Excellent for both its ease of application and the condition it remains in a year later. The gloss is better than an alkyd enamel, but a far cry from a two-part paint. However—as mentioned before—the less gloss a coating has, the less it shows dings, making a mono-urethane the appropriate choice for a high-traffic, frequently recoated area like a dinghy interior.

DINGHY EXTERIOR: TWO-PART LPU

The final part of the practice project was the exterior painting of the dinghy with a two-part linear polyurethane paint. It proved to be a true measure of paint quality as well as a test of shelf life. In fact, the paint was from an unopened can of Awlgrip that Technical Editor Ralph Naranjo purchased in 1984.

First we had to test the quarter-century-old paint. The off-white Awlgrip stirred easily and behaved normally, and after mixing a small amount with new catalyst and a spray reducer, it was strained through filter funnels. Very little residue was found, and the mixed paint was spread on a flat piece of Plexiglass. A few hours later, it was surface cured, and the next day the paint was hard and sandable.

Spraying it on the dinghy was a three-pass process starting with a light mist coat that provided a substrate for wetter second and third passes. One of the best aspects about Awlgrip, in our opinion, is its flow-out behavior during application. When properly mixed and reduced with brush or spray thinner, the paint has a cohesive quality that allows it to self-level and smooth into a slick, glossy surface. Awlgrip dubs its paint a "pro use only" product, but an experienced amateur with a deft hand, good attention to detail, and care in covering up can certainly tap into its quality as a finish material (with practice). The bottom line was an A+ grade for the gloss and durability from paint a quarter-century old.

This follow-up look at the fine performances of Pettit Z-Spar 100, Interlux Brightside, and Awlgrip highlights the value of practicing with a paint product on smaller surfaces first. It affords a less daunting do-it-yourself learning curve. Tackling a topside refinishing job before you have renovated a few tired dinghies is too big a challenge and basically ensures wasted energy and unnecessary frustration.

The Interlux Brightside painted on the inside of the dinghy easily handled a year of hard use, including our four-legged first mate's scratch-resistance testing.

