



Practical Sailor testers applied and rated six products designed to revitalize inflatable boats that've seen too many sunsets.

Tender Lovin' for Aging Dinks

PS tests coatings designed to breathe life back into worn-out inflatable boats.

Inflatable boats have a long list of bonuses, but eternal life is not one of them. The harsh effects of UV exposure, frequent use, and operating in polluted waters all take their toll on inflatable boats, whether they are PVC or Hypalon. Proper maintenance and frequent washing with a good dinghy cleaner help keep grime, oxidation, and organic fouling (barnacles, slime, etc.) to a minimum, but eventually, a new paint job may be needed.

Topside paints for inflatable boats, in general, have a poor reputation for durability. *Practical Sailor* checked out a selection of coatings for inflatable fabrics to see which one would best stand up to the tests of time on the water—and under the sun. This review of their application, abrasion resistance, and adhesion is the first report in our long-term test of these coatings. Look for follow-up reports on their durability and UV resistance in future issues.



WHAT WE TESTED

Practical Sailor tested products marketed as coatings to restore and revitalize the topsides of inflatable boats that have seen too many sunsets. Tuff Coat was the only true two-step system tested. We also evaluated topside paints from Marine Development Research (MDR)-Amazon, Polymarine, and Flexdel. From Inland Marine, we tested two products: Liquid Rubber, a compound used to spot-repair aged fabric or to “re-skin” an entire boat, and Topside Paint, which can be applied alone or on top of the Liquid Rubber.

All of these products are designed to bond to inflatable fabrics. To be effective, they must be flexible enough to expand and contract without cracking, as a boat is inflated and deflated, as the tubes heat up and cool down, and even as the dinghy is folded for storage.

For this report, testers looked at each product’s ease of application, abrasion resistance, and adhesion characteristics. To see how we tested the inflatable boat paints, see “Six Coatings Face Bench Tests” on page 15.

MDR-AMAZON

From MDR-Amazon—a New Jersey-based maker of marine maintenance products—we tested the dark gray No. 783 paint. The coating is a water-based vinyl paint designed to be a flexible coating for Hypalon, PVC, and vinyl; it’s available in several colors. The MDR product is non-toxic, odor-free, and environmentally friendly. Because it’s water-based, cleanup and application are very easy. No solvents are needed, and it does not require a primer. We did use the MDR Inflatable Dinghy Cleaner prior to painting the patch, and it did a good job of cleaning up the old Hypalon.

The MDR paint was easy to apply and quick drying. It left a clean semi-gloss finish on both Hypalon and PVC. After 30 days, it was smooth and dry.

Its slippery nature earned a Very Good for abrasion resistance on the PVC panel, but only a Fair on the Hypalon. The paint passed the adhesion test with flying colors on both panels.

Bottom line: The MDR-Amazon showed very good performance, especially for PVC applications.

Six Coatings Face Bench Tests

Durability and elasticity are our principal comparative factors in this test, but testers also considered ease of application, coating adhesion to substrate, its resistance to abrasion, and its price.

With the exception of the Polymarine products, *Practical Sailor* applied each paint per manufacturer's instructions to patches of Hypalon and PVC inflatable material. Polymarine's Flexithane was applied to a Hypalon test patch, and its Superflex to a PVC patch because these products are specifically made for those substrates only. Each test patch was assigned a number to ensure blind ratings.

The 10- by 14-inch PVC panels were cut from an 18-year-old, 9-foot Achilles Redline Hypalon dinghy that had been damaged beyond repair. Unable to locate a weathered PVC dinghy to cut up—and not wanting to destroy the 2-year-old test dinghies from the last RIB roundup (November 2009)—testers acquired sheets of new PVC from a local inflatable repair shop.

All of the paint manufacturers emphasize that the surface area of the inflatable must be cleaned and prepped properly before applying any primer or paint. All also suggest two coats.

For this test, we roughed up half of each panel with 80-grit sandpaper prior to application to see whether this prep scuffing would help the paint to adhere better. The patches then were cleaned with Nautical Ease, *PS's* Budget Buy in our March 2008 test of inflatable boat cleaners. (For more on that test, see "Dinghy Cleaners" on page 18.)

The testers applied the paints with foam brushes; bristle brushes have a tendency to leave brush marks in the thick, fast-drying paints. We caution anyone working with these products to read all of the instructions carefully. Work outdoors and upwind, and wear safety gear. It's best to work in temperatures above 70 degrees and in low humidity to ensure proper curing.



To gauge each coating's abrasion resistance, testers dragged a weighted 320-grit sanding block across each panel three times.

PS testers rated each panel's initial appearance and the appearance after 30 days of drying and curing. They were subjected to folding, bending, and hand stretching after the cure time, but none of the panels showed any signs of cracking.

To determine the paints' abrasion resistance, testers dragged a 320-grit sanding block across each panel three times. Atop the block was a two-pound weight, and it was dragged using a string so that each drag had a uniform amount of pressure on it. Paints that showed very little or no scuffing earned the best ratings, and those that showed considerable scuffing were rated Poor.

To determine how well the paints adhered to the substrate, testers cut thin crosshatches in the coating with a knife. Tape was placed over the cuts and pulled. We used a pass/fail rating for this test. If any of the coating stuck the tape, the paint was given a "fail."

None of the samples showed any visible signs of cracking after 30 days or after bending and folding. We will again check appearance and conduct the fold-test to gauge flexibility, cracking, and weathering after the mounted test patches have been out in the Florida sun and sprayed periodically with salt water for six months.

SYNERGY RESEARCH CORP.

Tuff Coat, manufactured by Synergy Research Corp., is sold as a two-part system comprising a quart of basecoat and a quart of topcoat.

The basecoat is a synthetic rubber compound designed to bond directly to Hypalon, but it can be used on PVC with a little extra sanding and cleaning with acetone. In testing, the thick basecoat bonded quickly and smoothly to the Hypalon. Getting it to bond to the PVC entailed a little extra prep work, and the paint bubbled up a little and remained tacky for almost 24 hours.

The topcoat is a water-based acrylic vinyl designed to bond to the basecoat. It can be thinned and cleaned up with water. In our test, the topcoat dried quickly and smooth on the Hypalon, but it was still tacky on the PVC after 48 hours, eventually pulling together after 72 hours in the Florida humidity. The dry times for both products were in line with the maker's instructions, which

state that curing could take up to a week when applied to PVC.

The Tuff Coat we tested was a no-gloss paint, which SRC says typically is best for older, distressed boats, but the company offers the product in a range of glosses and colors.

After 30 days, the flat paint we applied showed some brush marks.

On Hypalon, the Tuff Coat rated Good in abrasion



AS VALUE GUIDE		DINGHY PAINTS for HYPALON and PVC					
MAKER	MDR	TUFF COAT	INLAND MARINE		POLYMARINE		FLEXDEL
PRODUCT	No. 783 \$	Basecoat + Topcoat	Liquid Rubber + Topside	Topside Paint	Flexithane (Hypalon) ★	Superflex (PVC) ★	Flexabar Buoy Coating \$
PRICE / SIZE	\$29 / quart	\$88 + \$45 / quart	\$55 + \$39 / quart	\$39 / quart	\$93 / 500 mL	\$36 / 500 mL	\$19 / quart
COLOR	Dark gray	Light gray	Light gray	Light gray	Light gray	Light gray	Dark blue
GLOSS	Semi-gloss	Flat	Semi	Semi	Glossy	Semi	Glossy
EASE OF APPLICATION: HYPALON / PVC	Excellent / Excellent	Good / Fair	See text	See text	Fair / NA	NA / Good	Good / Good
DAY 1 APPEARANCE: HYPALON / PVC	Excellent / Excellent	Fair / Good	See text	See text	Good / NA	NA / Good	Good / Good
DAY 30 APPEARANCE: HYPALON / PVC	Excellent / Good	Fair / Poor	See text	See text	Excellent / NA	NA / Excellent	Good / Good
WATER BEADING: HYPALON / PVC	Good / Good	Good / Excellent	See text	See text	Excellent / NA	NA / Good	Good / Good
ABRASION RESISTANCE: HYPALON / PVC	Fair / Very good	Good / Fair	See text	See text	Excellent / NA	NA / Excellent	Excellent / Very Good
ADHESION TO MATERIAL: HYPALON / PVC	Pass / Pass	Pass / Pass	See text	See text	Pass / NA	NA / Pass	Fail / Pass

★ Best Choice PVC ★ Best Choice Hypalon \$ Budget Buy PVC \$ Budget Buy Hypalon

resistance, but the scuffs showed more on the PVC application. It passed the adhesion test on both.

Bottom line: The Tuff Coat was a middle-of-the-pack performer.

INLAND MARINE

Inland Marine, a Florida-based maker of inflatable boat repair and restoration products, markets multiple products for worn-out inflatable boats. To revitalize oxidized, aged fabrics, Inland offers Liquid Rubber, which can be applied to the whole boat, to spots where there is extreme wear, or areas where some fabric may be exposed. A quart should cover about 50 square feet.

Sold separately is the Inland Topside

Paint, a water-based coating that can be applied over the Liquid Rubber or directly onto Hypalon or PVC that is in fair condition. A quart should cover the topside of a 9-foot dinghy.

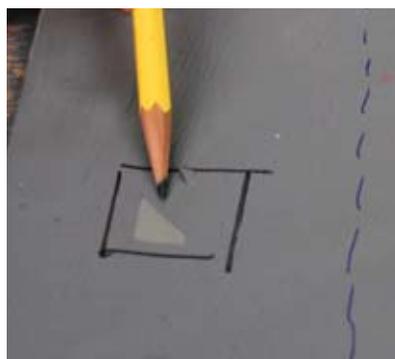
The basecoat formula is pure EPAM liquid rubber, and it has the consistency of cool honey. It comes with a small bottle of catalyst, and when mixed, the solution has about a six-hour shelf life, depending on temperature and humidity. The instructions are emphatic that the surface should be roughed up well. They suggest cleaning Hypalon with acetone and cleaning PVC with MEK. Thinning and clean up is best with xylene.

We applied the Liquid Rubber plus Topside Paint to a section of the test

patches and Topside Paint alone to the rest of the patches so that we could see whether using both parts added longevity to the coating. According to Inland, few customers apply both products.

Following our initial adhesion tests, it was obvious that the products had not been allowed to cure thoroughly. Applying coats over un-cured paint leads to adhesion problems, according to Inland, and that is what happened on the test panels.

The instructions on the cans had not specified a cure time in a high-humidity climate. However, a fact sheet supplied with the Liquid Rubber does instruct users that dry times and cure times would be longer in humid climates, and that full



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Adhesion was deemed poor if masking tape removed any paint after it had been cross-hatched with a razor. Inland Marine's Topside Paint didn't stick to its Liquid Rubber product on Hypalon (far left) nor on PVC (left). The maker said Liquid Rubber requires a longer cure before coating, so PS is re-testing both products.

Material Pros and Cons

Inflatable dinghies are manufactured from one of two types of fabrics: Hypalon or PVC (polyvinyl chloride). Both of these materials can serve sailors' needs, but they offer different pros and cons.

A synthetic rubber material patented by DuPont, Hypalon generally is better than PVC at handling abrasion, extreme temperatures, exposure to lots of sun, ozone, gasoline, oil, chemicals, and environmental factors like mildew and fungus. Hypalon boats are heavier and more expensive than PVC, but they typically hold up better over the long haul—especially in warmer climates—and come with a longer warranty.

PVC is a vinyl polymer. PVC-coated inflatable boats are lighter and more easily portable than Hypalon dinghies, but the fabric is not as resistant to extreme temperatures, abrasion, chemicals, or ultra-violet rays.

Construction methods using the materials also differ. Hypalon boats have airtight, glued seams, but because PVC is a plastic, its seams can be thermo-welded or glued. This allows manufacturers to mass-produce PVC boats, making them less expensive; however, it also means the seams are more difficult to repair unless you happen to have a thermo-welding setup



PVC-coated inflatable boats like this West Marine P-V350 have the benefits of light weight and easy portability.

in your garage.

Hypalon inflatables are best suited for cruisers, those who use a dinghy frequently or in severe climates, and those who leave the tender inflated the majority of the time. Because Hypalon dinghies can last for a decade or longer, buyers on a budget would do well looking for a used Hypalon in good condition. That way you get the high-durability and ruggedness of Hypalon at a cost closer to that of a new PVC boat.

Boat owners looking for a lightweight, limited-use dinghy that will be used in a mild climate likely would be served well by a PVC inflatable.

curing could take a week. They made no mention of whether the Liquid Rubber should be fully cured before overcoating it with the Topside Paint nor did they give a suggested re-coat timeframe. According to Inland, the directions will be amended with more specific instruction.

This application snafu highlights the need to carefully read all literature included with a product and to apply products to a test patch before coating an entire boat so that an accurate cure time for the conditions can be established. This is particularly important when using multiple or two-step products.

To ensure a fair evaluation, we refrained from rating the botched Inland test panels for this report, and a new set of PVC and Hypalon panels will be coated

with the Inland products for a re-test. At presstime, the products were being applied to new panels per a followup conversation with Inland Marine Managing Partner Dan O'Connell regarding dry and cure times. Look for our ratings and report on the re-test in an upcoming issue.

Bottom line: Testers are withholding any comment on the Inland products pending the results of the re-test.

POLYMARINE

Polymarine, a British company with an extensive line of accessories, components, and products for inflatable boats, is distributed through Inflatable Boats USA in Bradenton, Fla. The company offers two different paints for inflatable boat restoration. Its Flexithane is specifically designed for Hypalon, and Superflex is for PVC fabrics.

Both the Hypalon and PVC test patches were washed with Polymarine Boat Cleaner. The Hypalon was prepped with Polymarine P 510 sol-

vent, per maker's instructions, and the PVC was rubbed down with Polymarine PVC Primer.

The Flexithane paint was a very thin liquid that dried in 30 minutes on the Hypalon.

The Superflex also dried within 30 minutes. Both are toxic paints, so safety precautions, including wearing a mask, should be taken.

Both paints produced a nice, smooth satin finish, rated Excellent for abrasion resistance, and passed the adhesion test.

After 30 days, the Hypalon beaded water the best, but it did show watermarks after drying. The PVC also beaded up, but it looked better after drying.

The Flexithane runs about \$93 per 500 milliliters (just more than a half-quart), and the Superflex costs about \$36 per 500 milliliters.

Bottom line: These both performed very well in all of the bench tests and were easy to apply. The only thing holding the Flexithane back is its price—which is about double the most expensive



Inflatable Cleaners Recap

For every thing, there is a season, and for every type of marine filth, there is a dedicated cleaner to deal with it—and we've tried most of them. Over the years, we've tested everything from black-streak removers to canvas cleaners to mildew fighters. We've come to the conclusion that a mild solution of biodegradable boat soap and some elbow grease is often all that is needed. But when it comes to deep cleaning or attacking stubborn stains, a specialty cleaner is sometimes worth the added expense and can save a great deal of time.

Inflatable boat cleaners are case in point. For regular cleaning, boat soap and water work just fine, but for more serious jobs—like prepping a weathered, oxidized dinghy for a topside paint job—an inflatable boat cleaner is recommended. All of the makers of inflatable boats we've spoken with advise using a dedicated inflatable cleaner rather than high-strength multi-purpose cleaners. Not only does a specific cleaner mean it won't damage the material it's cleaning, but you also won't have to worry about adhesion issues when it comes time to patch a leak. Trying to patch a leaky dinghy that's been treated with a product like Armor All is a losing battle.



The top set of panels shows the "before" state of the test panels: filthy and oxidized. The bottom set shows how well Nautical Ease dinghy cleaner removed the grime and chalky finish.

We last tested inflatable boat cleaners in the March 2008 issue. For that review, we evaluated products from Star brite, MaryKate, Nautical Ease, Marine Development and Research Corp. (MDR), Seapower, Pennel & Flipo, and Zodiac Inflatables.

Testers rated each cleaner on ease of application and cleaning effectiveness. The top three performers were the NRS Inflatable Boat Cleaner, MDR Inflatable & Dinghy Cleaner, and Pennel & Flipo Orca Tube Cleaner, and Nautical Ease was named the Budget Buy.

of the other test products. The Superflex is priced at the high end of the spectrum as well, but its cost is somewhat more palatable given its top performance.

FLEXDEL

Flexabar Buoy Coating maker Flexdel manufactures many water-based anti-fouling bottom paints. Its Buoy Coating is sold as a restorative paint for flexible and pump-up PVC and vinyl buoys and fenders. It also works well for inflatable boats, but it is not marketed for such applications.

The Buoy Coating currently comes in multiple colors; we tested the blue (No. 40103). It bonds to PVC with a high degree of UV resistance, durability, and high visibility, according to the maker, but the company makes no claim that it will adhere to Hypalon.

Testers cleaned the Hypalon and the PVC patches with Buoy Coating thinner and applied the paint to both, although it's specifically designed for PVC and vinyl. The paint has an extremely strong odor but dries very quickly, leaving a bright, glossy finish. After 30 days, it cured

to a lumpy finish on the Hypalon, but remained smooth and glossy on the PVC.

The Buoy Paint showed very good abrasion resistance and adhesion on the PVC, and surprisingly, it showed excellent resistance on the Hypalon. However, a small piece of the coating came off during the adhesion test on the Hypalon patch, which was not a shock given that it's not formulated to adhere to that material.

Bottom line: The least expensive of the lot at \$20 per quart, the Flexabar Buoy Coating gets the *PS* Budget Buy for PVC application.

CONCLUSION

There is a steadfast rule in marine coatings application that it's imperative to test the products on a small section prior to carrying out the full project. The small bit of added work and headache pales in comparison to the migraine of stripping fresh paint off the entire dinghy should it not cure or bond well.

In the case of topside paints for inflatable boats, we suggest doing a test patch with all of the steps involved, then conducting an adhesion test similar to ours once the paint has cured. Remember that weather is a big player in determining dry times and cure times.

While our final ratings could change once the results are in from the Inland Marine re-test, we've tapped the top picks among the other test products. The *PS* Best Choice for Hypalon is the Polymarine Flexithane. It's pricey, but it was a top performer in this round of tests. We'll see how durable it is over the long haul. If your dinghy budget doesn't cover a Flexithane application, we recommend the Budget Buy MDR-Amazon. The Best Choice for PVC is Polymarine's other coating, Superflex. It also ranks at the high end of the price spectrum. For budget-minded sailors, we suggest the PVC Budget Buy, Flexabar's Buoy Coating. 



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