

Clean Boating Tip Sheet

Selecting a Bottom Paint

The Issue

Marine growth, such as barnacles and slime, impair vessel performance. To maintain top performance, therefore, boats are often painted with toxic paint to prevent fouling growth. Unfortunately, the biocides found in the paints are harmful to many marine critters—not just those that try to make their homes on the undersides of boats.

Selecting a bottom paint is not an easy job. The challenge is to select the least toxic paint that will effectively prevent fouling. The effectiveness of a particular paint will be impacted by water temperature and salinity and by how frequently and how quickly the vessel is operated.

The Paints

Bottom paints can be separated into three general categories: antifouling hard, antifouling ablative, and non-toxic coatings.

The two most commonly used varieties of coatings are hard and ablative paints:

- When hard or “contact leaching” paints dry they create a porous film on the hull. Biocides are held in the pores. The toxins dissolve when they contact water.
- Ablative or “sloughing” paints are partially soluble. The active ingredient is continually leached out. The underlying film then weakens and is polished off as the boat moves through the water. Fresh antifouling paint is, thus, exposed.

Hard paints contain varying levels of biocides which are released slowly. Ablative paints generally contain lower levels of toxins yet they are released at a more steady rate. The impact to the aquatic environment overtime is about the same.

Non-toxic coatings are the most environmentally-friendly option. They contain Teflon or silicone and produce hard, slick surfaces to which fouling growth cannot firmly attach. Paint companies are moving toward the broad introduction of non-toxic slick paints. At this time, however, they are not widely available.

Which bottom paint is right for you?

There is no easy answer to this question (at least until biocide-free coatings are readily available and affordable). Weigh the pros and cons described in the following table and consider the type of boat you have and where and how you use it. Ask yourself the following questions:

- How frequently do I use my boat? Ablative paint is most effective when a boat is used regularly.
- How quickly do I typically travel? Speed boats are generally painted with hard paints.
- Will I want the hull scrubbed while the boat is in the water? If you anticipate underwater hull cleaning, do not use ablative paint.
- Will I have the boat hauled annually? Hard paint is applied annually. Some ablative paints are designed to last for more than one season.
- What type of coating is presently on the hull? Select a new coating that is compatible.

Comparison of Maintenance Requirements

Maintenance Need	Ablative Paint	Hard Paint	Environmental Issue
Frequency of repainting	Every 1 to 3 years depending on the thickness of the original application and use of boat.	A single coat is applied annually.	AIR QUALITY. Fumes (volatile organic compounds) that are harmful to human health and air quality are released whenever solvent-based paints are used. Use water-based paints whenever practical.
Hull preparation	Light sanding is generally all that is needed prior to application of new paint.	Annual heavy sanding is suggested to improve adhesion & prevent build up. If you chose light sanding instead, the resulting build up will need to be blasted or stripped off periodically.	DEBRIS. Use the following techniques to keep debris out of the water: <ul style="list-style-type: none"> • Collect dust created by sanding with a vacuum sander or in tarps. • Blast or strip in an enclosed area where debris can be easily captured. • Send collected debris with your regular trash to a municipal landfill or incinerator. • Encourage your marina or boatyard to follow these pollution prevention practices.
Pressure washing	Pressure washing will remove some ablative paint.	Pressure washing will remove fouling growth and possibly paint chips. Very little pigment should be released.	RELEASE OF BIOCIDES. Boatyards are required by law to remove visible solids from pressure wash water before it is returned to local waterways. <ul style="list-style-type: none"> • Solids from hulls painted with hard paints are easily collected in filter cloth, settling basins or even hay bales. • Inform your yard manager if you have ablative paint. He or she should use minimal water pressure so that, to the greatest extent possible, just slime is removed. You will be protecting the environment and your investment in the paint.
Underwater hull cleaning	Ablative paint should not be cleaned in the water.	Hard paints may be cleaned by divers if done carefully.	RELEASE OF BIOCIDES. Be aware that colored plumes should not be visible in the water when a hull is being cleaned. They indicate that paint is being removed. <ul style="list-style-type: none"> • Hard or slick paints may be cleaned while a vessel is in the water as long as care is taken to use the least abrasive material practical (see the Clean Boating Tip Sheet Underwater Hull Cleaning). • Ablative paints should not be cleaned in the water as the scrubbing action will release paint and its associated biocide. If they must be cleaned while in the water, care should be taken to use soft material such as terry cloth.



For information about the Maryland Clean Marina Initiative contact the Maryland Department of Natural Resources at (410) 260-8773 or visit dnr.maryland.gov/boating