BOTTOM PAINTING

What makes KKMI stand apart from other yards

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Bottom Painting at KKMI

Objective

Most boatyards offer bottom jobs, but few follow the same level of detail. Many factors contribute to a successful bottom painting project and we would like to outline critical steps and highlight KKMI's approaches and procedures. We believe that we can demonstrate that by bringing your boat to KKMI you will receive the highest quality craftsmanship and the best value for this service.

While we will attempt to answer some big questions about how bottom paint works, this document is not intended to educate you on the many types of bottom paint. We assume that you know what kind of paint you intend to use based on previous experiences. If you need help deciding what type of antifouling would work best for your boat, your project manager will be happy to discuss that with you.

Safety First

Applying antifouling paint is not the same as painting the walls in your home. Antifouling paint is toxic, by design, and is regulated under Federal and California laws. If you have not been properly trained to apply antifouling paint, you'd be well advised to either work alongside someone who is experienced, or hire a professional. That's where we come in.

Whether you are new to bottom painting or have "done it for years" you should be very mindful of the associated safety, health and environmental concerns. If you are contemplating painting your bottom, you must notify us in advance of beginning any work, sign a copy of KKMI's Contractor and Customer Rules and review and agree to KKMI's Best Management Practices. The above applies to all personnel that are working on the vessel.

Proper safety gear is extremely important

California Proposition 65 requires us to notify you when antifouling paint contains compounds that are carcinogenic, developmentally harmful, or impact male/female reproductivity. See the specific Safety Data Sheet (SDS) for the paint being applied. Accordingly, KKMI insists that all personnel wear the proscribed Personal Protection Equipment as defined in each products' respective SDS.

Preparation is Crucial

Following our well defined, detailed procedures is what makes a KKMI bottom job superior. KKMI has worked closely with antifouling manufacturers to develop procedures that follow their recommendations. Accordingly, knowing what is required by these companies, we are confident that our quality and craftsmanship exceed industry standards.

- First, we pressure wash the bottom. Pressure washing is an important step to remove biologic and calcified growth, something that simply scrubbing cannot do.
- Next, we aggressively sand the entire bottom with 80 grit sandpaper. This is done with a vacuum sander, which is not only better environmentally, but it also helps keep your boat and our facilities cleaner.
- Areas where the sander is not able to reach, such as where the rudder meets the hull or inside through-hull fittings, are sanded by hand. If these areas aren't properly sanded, they can compromise the adherence and efficacy of the paint.
- Any areas where the paint has detached from the hull will require additional care. This detachment causes the overall thickness of the paint to vary. It also leaves a pronounced edge where the failure has occurred. The edge needs to be sanded down, or "feathered in", to lessen the likelihood of further detachment. In the feathering process, the underlying material (usually gelcoat) can become exposed. When this happens, a coat of epoxy primer will need to be applied so the new antifouling can properly adhere to the hull. Your project manager can discuss this additional work with you, if applicable, as this labor is not included in KKMI's Bottom Painting Package.
- Prior to painting, we mask your boat off at the waterline to create a clean line between the new antifouling and the existing topside paint. Occasionally, depending on the condition of the topside paint, the tape may "lift off" the paint when it is removed. Although we make every effort to lessen this possibility, please be aware this can take place.

Sanding with 80 grit sandpaper

Hand sanding hard to reach places

Feathering into open patches

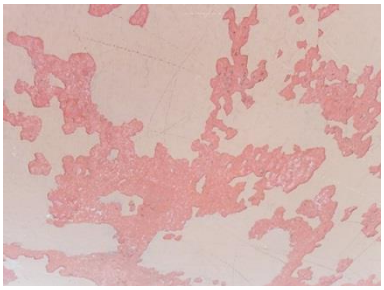
Masking along the waterline

One Coat or Two?

Generally, paint manufacturers recommend two coats of antifouling to achieve adequate and effective coverage. That being said, it's important to consider whether or not applying two coats every time your boat is hauled for bottom painting is the best practice for value and longevity. In other words, applying twice as much paint does not necessarily double the time between paint jobs.

Because most of the paints applied are high in copper content the paint is quite heavy. (A gallon of water weighs 8lbs. vs Trinidad antifouling at 21lbs per gallon.) Applying too many coats of antifouling can lead to a condition called "paint sick" where the paint begins to pull away from the hull. This can also be caused by inadequate surface preparation.

If a boat has standard coverage (two existing coats – or more) of modified epoxy paint, KKMI's preparation process will essentially remove one coat, meaning that only one coat needs to be applied. Not only does this approach save the customer money (by not having to apply additional coats), but it ensures that the boat will not end up with a "paint sick" bottom.



Paint sick condition

For some owners, where they experience frequent fouling at the waterline, a second coat just in this area is a good solution. Ask us about our 1½ coat painting package as an option.

Because ablative paint "sloughs off" over time (and during the diver's bottom cleaning process), two coats of antifouling may be warranted. KKMI can evaluate the bottom's coverage when the boat is hauled and determine how many coats of antifouling are appropriate to ensure adequate coverage.

No matter how many coats of paint are applied, KKMI's procedure is to make sure the copper that's in every gallon of paint gets onto the bottom of your vessel. Because of its weight, copper settles at the bottom of the container. If the paint is not properly mixed, that copper will be left behind. Just prior to application, every can of antifouling is placed in a paint shaker to resuspend those copper particles to ensure that they are uniformly and thoroughly applied to the vessel's bottom. We even "brush out" the remaining paint at the bottom of the can to make certain all the copper will be applied.

Good to the last drop!

Application Process

KKMI strictly follows every paint manufacturer's instructions. However, not all paints are applied in the same manner or look the same once done. For example, some paints must be applied in very thin coats and others may be applied more generously. The point being that each paint has its own unique application traits, which we are happy to share with you prior to application. Most boat owners prefer to have antifouling paint rolled on, while owners of racing yachts appreciate the benefit of a spray application process.

Project Manager inspects paint thickness

Also, not all paints dry in the same manner. For example, some paints leave what is called a "tiger stripe," meaning the coloration is different where the roller or brush overlapped the adjoining coat. Conversely, some paints have a uniform color and there are few indications of how the paint was applied. Antifouling paints are primarily formulated to achieve certain performance objectives and with less emphasis on looks.

Tiger stripes

KKMI's painting team is very detail oriented, the consequences of which do make a difference. For example, we are careful to not apply too much paint over an intake strainer, which would impede the flow of cooling water to your engine and cause the motor to overheat. Whether it be the painting of the bottom of your keel before launching, properly sanding under the boat stands prior to recoating, and even giving your boat a "bath" once launched, these details are included in KKMI's package.

It's Not Easy Being Green

By design, antifouling paints are intended to kill marine organisms, which presents a bit of a dilemma if you're concerned about our environment and sea life. As boat owners ourselves we share these concerns and have invested our own time and money in applying paints that are copper-free or employed the use of other, less toxic biocides on our personal vessels.

KKMI Pt. Richmond antifouling test barge

Despite many years and unknown sums of money invested by every paint company we work with, we've yet to apply a paint that we find as effective as the copper-based paints we supply today. We say this reluctantly, as we'd like nothing more than to be able to recommend to our client's products that are more environmentally friendly. However, such is not the case at this time.

Placards with different kinds of antifouling

That's not to say we've given up. For the past eight years KKMI has been working in cooperation with one of the largest paint companies to test a broad spectrum of paints. We've installed a testing platform with well over 100 different types of antifouling paints from many different suppliers. Hopefully in time this testing will allow us to identify more environmentally yet effective antifouling paints for our market.

Maintenance

No matter what kind of boat you have, but particularly if you have a motor boat, make sure the bottom is cleaned regularly. The additional drag from marine growth will cost you more in excess fuel consumption than having a diver periodically scrub your bottom.

While the diver is cleaning the bottom, they should also inspect all metal fittings, particularly the running gear. A clean propeller is a great way to improve your performance, no matter what type of boat. These days we're applying either a zinc coating to the running gear or PropSpeed, which is a non-metal based, hydrophobic coating that stunningly deters marine growth. Certainly, applying some form of a protective coating to your running gear is far better than nothing at all and will save you money in the long run.

Propeller strut and shaft coated in PropSpeed

Make sure your diver is certified by the California Professional Divers Association or other similar professional organization. Most marinas today require divers to be certified for many reasons, not the least of which is to make sure divers are not contributing to copper contamination of the sediments in marinas. Additionally, an accredited diver could also prevent you from being held liable for the carelessness that an unaccredited diver might cause. If a diver creates a paint-colored plume while scrubbing your boat, you could be held liable for violating the Clean Water Act and subject to a fine of $37,500, per occurrence.

California Professional Divers Association

"Environmentally Conscious for the Health of Our Industry"

Lastly, most boatyards have an additional charge for "excess growth." If you request the diver to remove this excessive growth prior to hauling, this too can constitute a violation of the Clean Water Act.

Bottom Painting at KKMI

Warranty

KKMI stands behind our workmanship. If your diver reports that your bottom paint has problems, please contact us immediately. As a symbol of good faith (pending the verification of the issues cited by the diver), KKMI will haul your boat at no charge so that you and KKMI may inspect the bottom. If the problem is due to our workmanship, we will work toward an amicable solution based on when the bottom was last painted

We are dedicated to making your boat ownership experience a pleasurable one. Key to this is delivering a quality product and a superior service experience. KKMI takes great pride in the longstanding relationships we've forged with the boat owners of Northern California. We look forward to providing your next bottom job….and more.

About KKMI

Over the past two-plus decades KKMI has been recognized for its leadership in many areas, from within the maritime industry and beyond. The American Boatbuilders and Repairers Association named KKMI "Boat Yard of the Year", the only Northern California boat yard to achieve this prestigious award. In addition, the California Water Environment Association has twice named KKMI "Small Industry of the Year" for our advanced methods in protecting our Bay waters.