

### **Selecting the right equipment**

The tools required are minimal: varnish, a brush, solvent, rags, strainer, tack cloth, sandpaper, sanding block, and a clean container. If the job allows, and you have access to electricity, a shop vacuum with a brush on the wand is very helpful. While it is possible to have the surface to be varnished too smooth, I don't believe it's possible to have it too clean.

Which varnish you choose is going to depend on personal experience and taste. For interiors, most people prefer a "Satin" or "Rubbed Effect" varnish Seajet Satin Varnish. This varnish contains urethane making it good for cabin soles as well. For hard use exterior applications, there is the Seajet Polyurethane Gloss a two-pack varnish.. This is a high gloss polyurethane varnishes with ultraviolet protection. This is particularly suited to areas subject to high wear and abrasion. The good old standard Seajet UV" varnish is the tung oil phenolic varnish that has been around for years. It offers excellent ultraviolet protection and a finish that, while glossy, doesn't look like sprayed plastic.

The proper brush to use is a good way of starting a spirited discussion among varnishers. Foam brushes have their supporters, as do china bristle and the specialty "varnish" brushes made specifically for varnishing. However, most of the professionals I know use "badger hair" brushes, as do I. In the long run, whatever you're most comfortable with and gives you the best results is the brush to use. For small work it should be 1, 1-1/2, or 2 inch wide. For larger areas you can use a larger brush, 2-1/2 to 3". It should also be a brush with a chisel tip, with enough body to hold an adequate amount of varnish. It is important to use a quality brush so that the bristles do not fall out.

### **Proper cleaning of the surface**

The first step is to clean the prepared surface. Vacuum the surface with a shop vacuum fitted with a brush. This should be followed by a wipe down with a soft rag. Be sure to use the solvent recommended on the varnish can. While this is drying, you can start the preparations for actually applying the varnish. Select a clean container, then clean it with a clean rag wetted with solvent. Pre-clean the brush in a Brushing Liquid. This should be done to any brush you use, even a new one. One indispensable tool in any painting or varnishing is a brush spinner. These are available at any hardware store and are worth their weight in ruined varnish bushes. Spin the pre-cleaned brush dry with this tool.



Now it's time for the varnish. Take the cleaned container, and get a paint strainer, one of the conical paper types is fine. Carefully open the can of varnish and pour enough varnish for the job through the strainer and into the container. By this time, the solvent from the wipe down on the finish to be varnished should be dry. The entire surface should now be wiped with the tack cloth. This should be a light wipe down to remove any remaining dust or particles. It pays to keep the tack cloth close at hand to remove any floating dust particles that land on your prepared surface. Doing small areas ahead of the varnish is one technique. Do not press hard with the tack cloth as this can leave a residue that may cause adhesion problems down the road. Once you have the surface as clean as possible, it's time to start varnishing.

### The right varnishing conditions

I would strongly suggest looking at the weather, and where you're going to be doing the work. Most of my varnishing is done indoors in the shop and I strongly recommend this if it's possible. But even there environmental conditions must be right. I prefer 12 to 18 degrees (Celsius) and 45 to 50 % relative humidity. I can't control this, but I can save my varnish jobs until I get those conditions, or something close to it. The 'I have to do it today' syndrome has spoiled many varnish jobs.

Of course, you can varnish in other conditions, but you must take those conditions into account while doing the work. Drying too fast can cause wrinkles and a loss of the wet edge (too hot), low temperatures can cause excessive open times leading to runs and sags, very high humidity can cause a loss of gloss. Two absolutes I never violate are never varnish below 10 degrees, or above 26 degrees..



After wiping, tacking, straining, pre-cleaning, and checking the weather, we're ready to apply varnish. For the first few coats, dip the brush into the unthinned varnish and apply it to the surface in quick strokes. The varnish need not be "worked in", but allowed to flow on. I usually start with horizontal strokes. Then, without dipping the brush in the varnish again, lightly "tip" off the surface with a vertical stroke. Do only a section wide enough that you can finish it and start on the area next to it without losing the wet edge. If you find the varnish doesn't blend in with the

previously done section, do progressively smaller areas until it does. This may change as the day warms up or cools off, depending on when you are varnishing. For large areas, rolling and tipping, applying the varnish with a roller then tipping it off with a brush is also an acceptable method. Be sure to apply the varnish as evenly as possible with the roller, and then finish by tipping off lightly with a vertical stroke. When finished, I lock up the shop and find something else to do, giving the varnish a chance to dry without stirring up any more dust than is necessary.



Another method is to apply at least one coat Wood sealer. Some people will apply two or three coats. Be sure to sand lightly with 220 to 320 grit sandpaper and clean the surface between each coat. Wet sanding is not recommended at this point, as it will raise the grain of the wood. This will make the task of getting a smooth surface more difficult. Again, this sanding should be done with the grain. The Wood Sealer is thinner than unthinned varnish and so will penetrate the wood further. It is easier to sand than the thinned varnish, but doesn't have the UV protection.



Varnishing over epoxy coatings is very popular today with more and more cold molded, laminated wood and "strip built" boats being built. Epoxies such as I Epiglass HT9000 can provide an excellent base for varnish on boats built in this manner. The wood must be prepared the same way described above prior to applying the epoxy, with one important addition. After the epoxy has cured, you must remove all the amine blush from the surface of the epoxy before sanding. Amine blush is the waxy substance that forms on the surface of the epoxy as it cures. This is best accomplished with warm water. Some people prefer to add a little household detergent to this warm water. I always wait overnight after such a washing to see if the blushing has stopped. If it has not, repeat the process as necessary. It is vital to remove all the blush before sanding preparatory to varnishing. This blush can interfere with the drying, performance and longevity of the varnish if it isn't removed.

Preparing to re-varnish an existing finish is much easier. If the finish is in good condition with no cracks, chips or deep gouges in it, all that needs to be done is sanding and cleaning. If there is damage to the surface leaving black marks at joints or along edges, then perhaps going back to the beginning and removing the finish is in order. If not, the surface should be dry sanded with 220 to 320 grit sandpaper, 320 to 400 grit if wet sanding. Some people will then wash with a soft rag and clean water. If this is done the surface must be allowed to dry thoroughly. Then, wipe with 333 solvent and allow the surface to dry once more. The final step in any preparation process is to lightly wipe the surface with a tack rag to remove the last of the dust (hopefully).

There are other methods varnishers use to seal the wood prior to varnishing bare wood, such as wet sanding with oils or saturating with linseed oil. These systems are more advanced and outside the scope of this article. They can be found in the more comprehensive books mentioned before. But the methods described above are the standard methods used by many professionals and most amateurs. Any of them, if done properly and with sufficient attention to detail, will provide an excellent base for the varnish to come, and a varnish job to be admired when completed. Come back next monthly to the "How To" section to learn the proper techniques in applying varnish.

Reapplying varnish over an existing system would be the same procedure as a new system from coat 4 or 5. Sand with 320-grit sandpaper, vacuum, solvent wipe, tack and varnish, one to two coats. For a boat that's left outside in the weather all season, it's recommended that the finish be sanded with 220-320 grit sandpaper and one to two coats be applied each year. In southern climates with more intense light, this could be twice a year.



Applying varnish is not as hard as some would have us believe. It does, however, take some practice and most of all, attention to detail. As with most finishes, if it doesn't work out exactly the way you would like, there is always more sandpaper and varnish. Yes, this does happen to professionals as well. The results that can be achieved are, in my opinion, well worth the effort and attention. With practice, it can become a way to make your boat stand out from all the others on the dock.