

Guidelines for Varnishing and Re-Finishing Teak

by
Ed Bottrell

Disclaimer: The following guidelines are based on my personal experience and may not work for you in the same way, especially if you introduce any variations in the materials, products, processes or conditions described. Further, I have no business interest in any of the products or suppliers mentioned – just a happy customer. My experience is based on having owned a Canadian built 1987 CS30 sailboat with teak interior for 13-years and a teak-laden Taiwanese built 1987 DeFever 41 trawler yacht for 2.5 years.

First, let's deal with exterior teak that has been previously varnished but where the varnish needs to be removed, right down to the bare wood. I think you will find the heat gun - carbide scraper technique described below is far better, easier, faster and removes less wood compared to sanding or brute force scraping. This is a personal belief; however, I know others who swear by sanding or scraping as the best methods.

Heat Gun and Scraping Tools

My preferred tools are a heat gun, small carbide scraper and gloves. The heat gun (about the same size as a hair dryer) was purchased from a regional home building supply store and came with several nozzles – I use the wide, narrow opening nozzle to direct the heat to a rectangular area. I do not know the relative merits of other paint stripping heat guns, but I consistently use mine on the 'high' setting (750W) and have over 50-hours of time on it so far. Occasionally the gun gets too hot (usually from restricted air flow) and shuts down for awhile but otherwise it will run continuously on a 15A breaker.

The 'pocket scraper' was purchased from Lee Valley Tools (about \$US15, <http://www.leevalley.com>) and has a triangular carbide blade (about 1" wide), and a comfortable handle about 7.5" long. I have used dozens of other scrapers and I highly recommend this scraper for removing varnish on teak. I have rotated the triangular carbide blade once; however, there was no perceptible wear on the old side. I will discuss the tool more in the techniques section but note here that the blade is sharp and pointed, and can easily gouge wood, gelcoat or you.

I always wear a glove on the hand holding the scraper for two reasons – the end of the tool holding the carbide blade gets very hot and it is easy to accidentally point the heat gun at your hand. I use heavy duty leather gloves with no problem. As you will read in the techniques section, it is easy to burn the teak and therefore even easier to burn yourself – SO BE VERY CAREFUL WITH THESE TOOLS.

Scraping Techniques

Very simply, apply some heat then scrape off the old varnish. Applying the heat can be tricky in terms of how close the nozzle is to the work and how long you leave it in one spot. It also depends on the thickness, type, age and condition of the old varnish. You

will probably develop your own style after a relatively short time, but from past experience, it is better to take your time to find the right combination. Once the wood is burned, it becomes very difficult to remove the burn marks. It is especially easy to burn and/or loosen veneer.

I typically pre-heat an area that I will be working on by moving the nozzle over the whole area for a minute or less. Then I leave the rectangular nozzle in one spot just long enough for the old varnish to bubble or change its appearance. When scraping, you will easily be able to tell when the varnish has not been heated enough by the amount of effort required.

The scraper works best parallel to the grain; however, you can scrape across the grain if you are careful. Usually 2-3 passes of the blade will get all of the old varnish off. The old varnish comes off in flakes and can make quite a mess, especially if you are outside with a wind blowing. I try to pick up the mess regularly with a shop-vac.

If the old varnish is in bad shape, you might first try a traditional paint scraper or cabinet scrapers (e.g. see products from Lee Valley Tools) to remove as much as possible without damaging the teak. Be sure to keep the paint scraper blade edge flat and sharp or the cabinet scraper's edge burnished with a proper 'hook'. If you find that you are working too hard or removing too much teak, then go to the heat gun and carbide scraper. Also, if the grain of the wood changes a lot, such as parquet flooring, then the heat gun and small carbide scraper will work the best.

Sanding and Cleaning Teak

Teak sands well and the goal should be a smooth surface around 220-320 grit. Coarser grit does not seem to look as good. Finer grit such as 400-600 does not appear to improve the final finish but does seem to burnish the wood, possibly preventing a strong bond between the varnish and wood. Where needed you can start with a very coarse grit, say 60-80, but be careful because it is easy to remove too much wood. Be especially careful with veneer because sanding may damage the surface.

I typically make two passes, the first at 150-180 and the second at 220-240. For most flat surfaces, I use a random orbit palm sander, which does a good job of preparing the surface without leaving sanding marks. A dust collector on the sander and/or a mask are highly recommended, not just to cut down on the mess but because teak dust can be toxic. Be sure to save some teak sanding dust for mixing with glues, epoxies, fillers, paints etc. if you are doing any repairs. NEVER use steel wool on anything teak or dark stains may appear.

Removing stains and burn marks or lightening aged teak can be more difficult. If sanding does work, then try a teak cleaner and/or brightener, such as Star Brite, that are available from most chandleries. Other products that contain Oxalic acid, such as Bar Keeper's Friend will also work. **BE SURE TO TAKE ALL SAFETY PRECAUTIONS AND FOLLOW THE MANUFACTURERS' INSTRUCTIONS.**

I understand that diluted bleach and liquid soap are also effective – one Grand Banks trawler owner keeps his natural teak decks clean with a formula of 1 Cup Clorox Bleach, 1 Cup Whisk and 5 Gal of water; however, I have never tried this myself. The overall preferred method for keeping teak decks clean is the regular use of seawater because it will clean, condition and tighten-up the wood. Avoid scrubbing teak with the grain because the softer wood fibers will be removed leaving ridges.

Oiling Teak

Teak oil can be a very effective and attractive finish. Teak oil typically sold in chandleries for use on exterior teak will have additives that improve resistance to UV light and wear. This type of teak oil tends to result in a softer, almost rubbery finish that is OK for exterior use. It will still fade to gray in sunlight in a matter of weeks and will also need cleaning and periodic brightening before re-oiling. The same teak oil used inside may be OK for one or two coats, but can quickly build up to a rubbery, almost sticky surface because of the additives. Instead, use teak oil without the additives.

Oiled vs. varnished exterior teak, on boats or other items like teak garden furniture, appears to be a matter of personal preference. Most experienced owners believe that exterior teak should be allowed to turn naturally gray and periodically cleaned with seawater and/or mild soap. Further, oiled or varnished teak decks can be uncomfortably warm for bare feet and slippery when wet.

Exterior Teak Varnish: Cetol – Marine, Light and High Gloss

There are many varieties of exterior teak varnish that work well and have strong advocates. Although it seems like the debates go on endlessly, I have noted a general preference for Cetol (a Sikkens-Interlux-Yachtpaint-Akzo Nobel product) by boat owners in all climates. From anecdotal information, I know other products work well such as Epifanes; however, I am going to limit my comments to my experience with Cetol, a product that has worked well for me on exterior teak. Cetol can be used for interior uses but I prefer a different product, Interlux Goldspar Satin that I will describe later. For more information about Cetol and its applications, visit their website at www.yachtpaint.com.

In summary, several layers (3-6) of Cetol Marine or Cetol Light are applied on teak. If desired, additional layers (3-4) of Cetol High Gloss are applied on top (never the base coat) of Cetol Marine or Cetol Light.

One of the complaints with Cetol Marine is that some people believe it appears too orange. Boats built with teak up until the late 1980's tended to use teak from the Philippines that had a slight, but noticeable orange hue. Since then, we see more South American teak that is usually brown. Also, the original version of Cetol seemed to enhance the orange appearance on the Philippine varieties of teak; however, the current formula does not have the same problem. Even so, Sikkens came out with a version called "Cetol Light" that all but eliminates the orange hue effect. Cetol Light is not a 'watered down' version of Cetol, just Sikkens name for the different hue.

Staining Wood to Look Like Teak

Cetol or other varnishes can be applied over stained wood; however, it is rarely necessary to stain teak. A 'teak-like' hue can be created on other interior woods by using stains such as Minwax Early American or Colonial Maple Wood Finish.

Do not put stain directly on teak or it may turn 'blotchy'. First, put down a thin coat of varnish, and then put stain over the varnish in a thin layer and build up as necessary to match surrounding areas.

Applying Cetol

It is a good idea to try out your choice of Cetol (Marine or Light) on a spare piece of wood. Also, all coats should be applied within 1-2 weeks.

Assuming the teak has been stripped and sanded then the next step is to remove any dust from the sanded wood by blowing it off and/or wiping it with a tack cloth. You can make your own tack cloths or buy them from places like Lee Valley Tools (about \$Cdn 1.20 - 1.40 ea. + tax).

The next step is to clean the teak. Teak, like some other hardwoods, has oils that will interfere with varnish, paint and glue. I have had interior teak parts glued together with fresh woodworking glue that fell apart after a few weeks because of the bonding problem when the oils have not been removed. These oils are also hard on tooling such as carbide router bits.

Sanding does not remove the oils. I have used acetone successfully but it usually requires several wipe-downs with clean cloths and can leave a residue. For the past few years I have been using xylene (e.g. Interlux 216 Special Thinner), which also works for thinning epoxies and varnishes. Both of these chemicals and their fumes are dangerous to your health and highly flammable. I highly recommend neoprene gloves, safety glasses, significant ventilation and an appropriately rated respirator. Both chemicals dry very quickly and painting can commence shortly. If the teak has been exposed to the elements for more than 24-hours, then clean the teak again. By the way, these chemicals and others are commonly found in a number of products and workplaces – more information is available at the Agency for Toxic Substances and Disease Registry <http://www.atsdr.cdc.gov/>.

The first coat or two of Cetol (Marine or Light) should be thinned about 20-25% (e.g. Interlux 216 or 333) to improve its absorption into the wood. Also, it is a good idea to pour out the amount of Cetol (or any varnish) that you expect to use into a separate, clean container to avoid contamination of the primary container. Throw away any unused varnish instead of returning it to the primary container. Consider using a preserving gas (see Lee Valley Tools, Finish Preserve – also known as Bloxygen in the US) that contains heavier than air gases (e.g. argon), which settle onto the surface of the varnish and prevent oxidation or deterioration of the unused varnish.

Sikkens recommends a China Bristle brush for applying Cetol and others prefer Badger brushes; however, I have successfully used 'throw away' foam brushes (typically wood handle, dense grey foam and less than \$1 each) for years. Do not use the black, open pore foam brushes because the varnish may dissolve the foam. Where there is little chance for contamination, I put the used brush in a baggie and put it in a freezer for 1-3 days. I have re-used these brushes several times before throwing them away. Also, I almost always wear vinyl gloves (about \$0.01 ea. from Lee Valley Tools) when I paint anything.

Apply the Cetol using good painting techniques; however, I find the product very forgiving. For best results, always stroke in one direction, not back and forth, and with a finish stroke parallel to the wood grain. The recommended time between coats is 16-24 hours and sanding is not needed until the last coat. If you are using Cetol High Gloss, then only 2-4 coats of Cetol Marine or Light are required. I prefer the High Gloss on exterior teak so I typically put on 3-coats of Cetol Marine and 4-coats of Cetol High Gloss. I lightly sand with 220-320 grit before the last coat of High Gloss.

Interior Teak Varnish: Interlux Goldspar Satin

I interviewed an Interlux paint technician at a boat show who encouraged me to try Goldspar Satin for the interior teak, including the sole, on our DeFever trawler yacht. I was amazed at how well the new varnish matched the color and luster of the old Taiwanese varnish. Admittedly this experience could be very dependent on the 1987 DeFever teak and my personal preferences; however, I have seen it work well in other boats too.

Wear resistance and susceptibility to chipping or other damage appeared to be very good during the relatively short time I owned the boat. I tried the Goldspar High Gloss and was not as pleased as with the Satin although it appeared to be a fine varnish.

Preparation of the interior teak was identical to that described earlier; however, where the old varnish was in good shape, I just lightly sanded with 220 grit before cleaning the surface in preparation for the varnish.

As with Cetol, the first two coats of Goldspar Satin were thinned 20-25%. However, unlike Cetol, I lightly sanded with 220-320 grit between all coats of Goldspar Satin. The sanding went quickly with a random orbital sander and I used tack rags to pick up all of the dust. Making the area as dust free as possible also helped. Because of sanding between coats, I usually put on 6-8 layers of Goldspar Satin to get the desired thickness and look.

Goldspar Satin seemed to require more diligence to apply even coats without sags. I used the "X" stroke technique to first apply the varnish then carefully brush-wiped the full length of the piece parallel to the grain. I found it was important to complete the brush-wiping within 5-10 minutes to allow the varnish to flow into a smooth surface. It was also necessary to re-wipe vertical surfaces such as edges to completely eliminate drips or sags.