

Waterlox Woodworking Finishing Guide

WHERE TO USE

Beautiful. Natural. Durable. That's a Waterlox finish. A unique blend of Tung oil and resin, Waterlox showcases the natural beauty of wood, providing lasting, durable protection. This elegant, one-of-a-kind finish has been made by the Hawkins family since 1910, and is still made by hand according to the original family formula.

There are many right ways and few wrong ways to apply Waterlox Original Tung oil finishes. It seems that many craftsmen, woodworkers and artisans have their own finishing process when using our products. This is yet another reason why Waterlox Original Tung oil finishes are the choice for so many.

As with any finish, special care and attention should be used when applying the Waterlox Original Tung oil finishes. Waterlox delivers spectacular results, and to make sure you achieve just that, this guide will take you step-by-step through the proper application of a Waterlox Original Tung oil finish. We also recommend that you watch the Waterlox product application video and review our FAQs found on our website at waterlox.com. Even though your project may not be a floor, the video will still be helpful.

PERFORMANCE HIGHLIGHTS

The term Waterlox means to "lock out water".

Back in 1910, the Waterlox chemists experimented with many different formulations and settled on one that was believed to be a "best of all worlds" formulation and subsequently revolutionized the finishing industry. Traditional finishes of that time were achieved mainly by hand-burnishing raw or modified linseed oil-based products (from the flaxseed and more available in the USA) into wood surfaces. Electricity in homes was not available yet, which is why they were applied by hand. In most cases, they would be topped off with a coat of wax. Therefore, wood finishes were very labor intensive and very expensive to apply and maintain. Most people in that day and age couldn't afford such a high cost to finish and maintain a finished wood floor; therefore, they would end up leaving them unfinished. Rugs and/or carpet were a much cheaper alternative in those days; which is why unfinished beautiful wood floors are often uncovered during home renovations.

Waterlox's formulation was designed to eliminate the need for all the work and expense. It was designed to be applied with an applicator or brush and required no further effort other than dry and the appropriate number of subsequent coats of finish. In other words, no oil needed to be hand-burnished and no wax needed to be maintained.

Features	Benefits
Tung oil-based	Penetrates surface Easy to maintain Enhances beauty of wood
Flexible	Moves with the wood Does not chip or crack Tolerates wide temperature ranges
Water resistant ¹	Excellent water resistance Condensation on glassware will not leave rings
Protective	Protects against common household spills Heat and Cold

Easy to Maintain

Easier to maintain than surface finishes and/or oils

Unlike common surface finishes such as polyurethanes (solvent or water-based) that conceal the wood's grain and beauty under a layer of plastic, Waterlox Original Tung oil finishes offer a unique handmade blend of Tung oil and resin that penetrates the wood, yielding a rich, hand-rubbed look that's durable and easy to maintain.

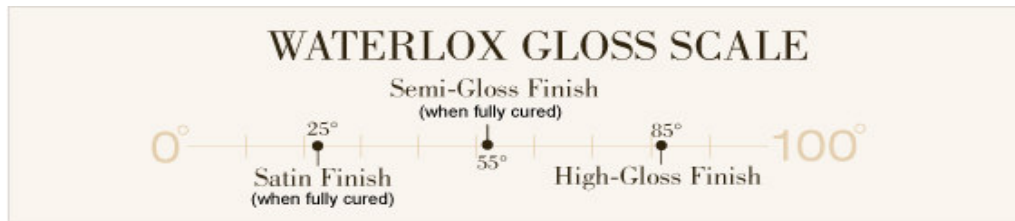
CHOOSING YOUR FINISH²

There is no right or wrong choice in terms of performance between each of the three interior finishing products. All Waterlox Original Tung oil finishes offer a durable protective finish that enhances the natural character of wood.

Each:

- Penetrates, is water resistant and forms a protective yet elastic finish against foot traffic, common household spills, moisture and daily use.
- Non-toxic and food-safe when cured.³
- Easy to use and apply.
- Easier to maintain than other interior clear finishes or surface finishes.
- Lasts much longer and requires less maintenance than a raw oil.

We suggest beginning all projects with the Waterlox Original Sealer/Finish and then continue to apply as many coats as you wish until you reach a desired look. We recommend using at least 3 - 4 coats, depending on the type of wood (softer woods require at least 4 coats). The Sealer/Finish can be rubbed out to a lower or higher sheen; or you can use Satin Finish or High Gloss Finish over the Sealer/Finish to achieve the right look for your project.



TIP

Regardless of the sheen desired for your project, we strongly recommend that you begin your project with our Waterlox Original Sealer/Finish. This product allows you to seal the wood and acts as a base.

Waterlox Original Sealer/Finish

- Produces a medium sheen (semi-gloss) appearance (75° gloss level when finished; fades to a 50-55° gloss level in 3-6 months).
- Our oldest and truly "original" product, since 1910.
- Our most versatile product. Many customers use only this product for all coats of finish.
- This product can be burnished up or down in gloss level using a variety of methods/techniques.

Waterlox Original Satin Finish

- Produces a satin appearance (20°-25° gloss level).
- Our lowest gloss level offered.
- Formulated to be brushed on and used "out of the can".
- Used as a finish coat only, over base coats of Waterlox Original Sealer/Finish.

Waterlox Original High Gloss Finish

- Produces a shiny appearance (85° gloss level).
- Our highest gloss level offered.
- Formulated to be brushed on and used “out of the can”.
- Used as a finish coat only, over base coats of Waterlox Original Sealer/Finish.

COVERAGE/THINNING

One gallon covers 500 square feet per coat. One quart covers 125 square feet per coat. The number of coats depends on the porosity of the wood being finished (check the wood hardness scale (Janka Chart) found on our website at waterlox.com). No thinning necessary.

DRY TIME

Our general rule of thumb is to wait 24 hours between coats. Poor ventilation, high humidity or cool temperatures may increase dry times.

VENTILATION

Although a project may be small in scope, cross-ventilation is still needed to dry and cure each coat of finish properly. Proper ventilation and air circulation must be provided when using any wood finishing materials. Most oil-based varnishes dry upon exposure to oxygen, which is also known as “oxidative cure.” A lack of cross-ventilation (air exchange) provides less free oxygen, slowing the drying process. Cross-ventilation is the biggest factor affecting dry times. It is not recommended that any solvents or solvent-based materials be used in a non-ventilated area. It is the oxygen molecules in the air that interact with the varnish, creating a chemical reaction and causing the film to dry. Therefore, the better the ventilation (during and after all coats) the quicker the film obtains its final hardness and other chemical resistance properties.

ASHRAE (The American Society of Heating, Refrigerating and Air-Conditioning Engineers) states that the typical air exchange in a residence using only mechanical HVAC can be as low as 0.35 air exchanges/hour. In most cases 0.35 air exchanges/hour will not be adequate to dry Waterlox in 24 hours. We therefore strongly suggest achieving a gentle flow of air by cross-ventilation. This can be achieved by the use of a box fan running at low-speed in a window or door exhausting to the outside air as well as an open window in some other part of the room or house to achieve 3 - 4 air exchanges/hour. Not only will this aid the drying process by pulling in fresh air loaded with oxygen, but it will exhaust the solvent odor.

Read the directions on the label completely before using, including information related to the use of a respirator while applying the finish. Lingering odor indicates inadequate ventilation, high humidity or both. If you cannot ventilate the area choose another product.

Be sure to use proper ventilation:

- While applying the coating, and
- During the curing process (first 24 hours after each coating is applied).

TIP

Be sure the room that you will be finishing your piece is well ventilated, but not drafty. If there are heat and air conditioning vents in the room, be sure to close off the ducts, and be sure to vacuum dust created by sanding before you begin. Room temperature needs to be above 60°F.

APPLICATION TOOLS

For safety: rubber gloves, goggles and a respirator fitted with an organic cartridge.

A natural bristle paint brush. This type of brush will hold more finish than a synthetic bristle brush.

- A 2.5" size is generally recommended. A smaller brush may be more suitable if applying the finish in tight corners, around rounded edges and/or decorations.

A lint-free rag.

A container that allows decanting of the amount of finish to be used for the project.

A vacuum, compressed air, or rag wetted with mineral spirits (paint thinner)

Mineral spirits, turpentine or paint thinner.

220, 320 grit or finer sandpaper or 0000 steel wool (if applicable).

TIPS

- Cleaning/Disposal methods for paint brushes between coats:
 1. Cleaning method:
 - Have two containers ready. One for the brush and one for the "used" paint thinner.
 - Pour about 1 inch of paint thinner (mineral spirits) into one of the containers.
 - Insert the brush into this container and press out the bristles into the thinner. Varnish will be released into the thinner.
 - Pour the contaminated varnish/thinner mixture into the other can.
 - Repeat steps 1, 2 and 3 several times until the thinner remains clear (no varnish).
 - The brush is now cleaned and ready for the next coat or job.
 2. Disposal method. Allow the brush to dry and dispose of it in a proper trash receptacle. Once the brush has dried it is inert and non-toxic. Use a new brush for each subsequent coat.
- NEVER just soak the brush in paint thinner, the Waterlox will gel and you will be applying what looks like little seeds on your next coat.

CLEAN UP AND STORAGE

CLEAN UP

Clean application tools immediately with paint thinner (mineral spirits) or turpentine. Properly dispose of rags, applicators and waste. Read carefully cautions on the product label(s).

STORAGE TIPS

Keep containers of Waterlox Original Tung oil finishes closed when not in use and keep in a cool, dry place. If stored properly, an unopened can of Waterlox Original Tung oil finishes have an almost indefinite shelf life. Cold temperatures will not negatively affect the product, but if Waterlox has been chilled or exposed to freezing temperatures, allow the product to stand for at least 6 hours in temperatures above 60° F before using. DO NOT artificially heat Waterlox products.

Partially filled containers may gel since Waterlox Original Tung oil finishes dry through oxidation. When a container is opened, it is exposed to oxygen and the remaining unused portion may begin to oxidize. This leads to skinning and eventually gelling of the product.

For the best results, pour the Waterlox you need to complete your job into another container and promptly reseal the original container (replace both the metal seal and screw top on the oblong can(s) and the lid on the round can(s)). DO NOT return any unused portion to the original can.

For proper storage, oxygen inside the Waterlox can must be displaced, by one or more of the following methods:

- Decant the product into a smaller airtight glass or metal container. DO NOT use plastic. If using a previously vacuum-sealed jar (e.g. pickles or baby food) use plastic wrap inside the lid to create an adequate seal.

- Use clean marbles or stones to raise the level of the finish and thereby displace the oxygen.
- With rectangular cans, squeeze the sides to push the liquid up and seal before the air returns into the can.
- “Float” the product with an inert gas, such as carbon dioxide or argon, or Bloxygen that is heavier than air.

Read carefully all cautions on the product label(s).

STAINS AND FILLERS

In today’s ever changing world, more and more products are available due to market forces and general reformulation. Therefore, we are not aware of every type of colorization and filling process available.

STAINS

Generally speaking, Waterlox Original Sealer/Finish can be used over any type of stain (water-based, solvent-based, alcohol based dyes, fast set types, etc.) provided it is completely dry (follow manufacturer’s recommendations for dry time or wait 72 hours, whichever is longer) and does not contain any waxes or silicones. We also recommend that you steer away from any type of stain that forms a film over the wood, for example a stain containing urethane or some thicker gel type stains.

TIPS

- If staining a wood project, do not skip any of the recommended coats of Waterlox as described in the project guides.
- An unstained surface finished with Waterlox Original Tung oil finishes produces an old-fashioned, hand-rubbed natural looking finish. Our special formula based in Tung oil brings out the natural patina of wood. With some species of wood this will dramatically change the look and staining may not be necessary, we suggest testing an inconspicuous area of your project or a scrap piece of wood from your project first before assuming you will need a stain coat. Regardless if stain is used or not, you will want to test all coats of the finishing system before making your decision.
- Keep in mind that not all pieces or boards of a single species of wood will stain the same; some will not match your sample board. Your stain/topcoat system may not transfer from one species of wood to another with the same effect.
- If stain is desired, be sure to follow the manufacturer's directions for cure time or wait 72 hours, whichever is longer, before applying coats of Waterlox Original Tung oil finishes. NEVER apply Waterlox Original Sealer/Finish over a stain coat that is not dry. Applying finish over top of it will only elongate the dry time because oxygen will not be able to get to the stain coat.
- NEVER sand a surface that has been stained as this process will change the color.

FILLERS

Most fillers are compatible with Waterlox Original Tung oil finishes other than those containing any wax or silicone. We also recommend using fillers that are marketed as being paintable and stainable, as this is an indication that they can be coated.

PREVIOUSLY FINISHED WOOD APPLICATION

Surface preparation is one of the most important steps when refinishing wood. Waterlox Original Tung oil finishes perform best over bare wood and are not designed to be used as a top coat over previously finished surfaces (does not refer to any stain coats(s) if used). Strip previously finished surfaces to bare wood, and then apply as described under “New Wood Application”.

If stripping a previous coating off the surface, doing a “sand and recoat” (and it is not previously a Waterlox product) or where not possible to apply to bare wood, our Waterlox Original Sealer/Finish can be used as a primer/tie-coat. It is imperative to identify the previous coating on the surface to know how to proceed.

Waxed surface. Nothing will adhere to wax other than more wax, and wax surfaces are extremely difficult to re-coat. In this case, you will need to strip the surface completely of any wax. We recommend against sanding or abrading the wax from the surface first as this has the potential to spread the wax around even more and not remove it completely.

We recommend stripping the wax from the surface by using water and ammonia, following the directions on the manufacturer’s label for “stripping wax”. If there is a wax build up, the wax may become gummy and need to be removed by scraping or wiping with rags. Repeat the procedure several times to be sure all wax has been removed. To remove any wax that has penetrated the wood fibers, the surface should be sanded to bare wood.

TIP

- Even though the wax has been removed from the surface, it may still be present in any gaps or spaces between the boards. These are extremely challenging to remedy and may require scraping to remove the wax. If Waterlox or any other coating is applied over these gaps/spaces and the wax is still present, the coating will not dry and will remain soft and cloudy.
- As we mentioned in the beginning of this section, removing wax can be very difficult and great care needs to be taken in doing so thoroughly. In some extreme cases, the wax may not be completely removable and the surface may therefore not be re-coatable.

After the surface has been stripped completely, begin by coating a 2’ x 2’ test area and allow it to dry for 24 – 48 hours. Initially, test for adhesion with your fingernail. It should be difficult to remove the coating if the wax has been properly removed. Also observe the coating that bridges the gaps/spaces between the boards. The film should not be cloudy or soft. Next, we recommend conducting a cross-hatch test to check for adhesion before beginning the entire project.

Surface coating finish (e.g.: oil-modified urethane, water base urethane, etc.). Since a surface finish lies on top of the wood, and will block the penetrating ability of Waterlox Original Tung oil finishes, we recommend sanding down to bare wood before applying Waterlox Original Tung oil finishes. One method of testing for an oil-modified urethane coating is to apply a drop of ammonia to a small, inconspicuous area. Cover the drop with something hollow to prevent the evaporation of the ammonia (e.g.: Dixie® cup, shot glass, etc.) If the film where the ammonia was applied becomes yellow, it is most likely surface finish.

When removing the previous surface finish, the last sand should be done with 100 - 150 grit sandpaper.

Other oil coatings (e.g.: raw non film-forming linseed oil, soya oil, Tung oil, mineral oil, etc.). Our Waterlox Original Tung Oil products are most likely compatible with these types of finishes. One method of testing for an oil coating is to apply a drop of ammonia to a small, inconspicuous area. Cover the drop with something hollow to prevent the evaporation of the ammonia (e.g.: Dixie® cup, shot glass, etc.) The ammonia will not only yellow the film, but will eventually wrinkle the film if it is an oil coating.

To prepare the surface, we recommend cleaning the surface with TSP (trisodium phosphate) and water, doing a clear water rinse and allowing it to dry for 24 hours. After the surface is dry, a light buff with 0000 steel wool or 320 grit sandpaper is sufficient. After the surface is prepared, re-coat with the Waterlox Original Tung oil finishing system.

To be sure the surface is ready, we recommend conducting a cross-hatch test to check for adhesion before beginning the entire project.

Shellac. Our Waterlox Original Sealer/Finish is compatible with dewaxed shellac. One method of testing for shellac is to apply a drop of alcohol to a small, inconspicuous area. Cover the drop with something hollow to prevent the evaporation of the alcohol (e.g.: Dixie® cup, shot glass, etc.). The drop of alcohol will dissolve the shellac if the finish is shellac.

To prepare the surface, we recommend cleaning the surface with TSP (trisodium phosphate) and water, doing a clear water rinse and allowing it to dry for 24 hours. After the surface is dry, a light buff with 0000 steel wool or 320 grit sandpaper is sufficient. After the surface is prepared, re-coat with the Waterlox Original Tung oil finishing system.

To be sure the surface is ready, we recommend conducting a cross-hatch test to check for adhesion before beginning the entire project.

TIP

A cross-hatch test is an industry test for adhesion. Waterlox Original Tung oil finishes are penetrating oil finishes and are therefore best used on bare wood (does not refer to stain coat(s) if used). Sometimes, sanding the surface is not an option for a project. To test the adhesion properties of a combination of finishes, test on an inconspicuous area first.

Directions to test for adhesion: Scuff sand a small inconspicuous area with 320 grit sandpaper. If you will not be sanding the surface to bare wood in the actual project, clean the area with TSP (trisodium phosphate) and water and complete a clear water rinse. Apply 1 coat of Waterlox Original Sealer/Finish. Allow the finish to cure for 4 days. Scratch a “tic-tac-toe” board into the cured finish by cutting through the film and into the wood. Place a piece of Scotch® tape over the cross-hatch and press it down firmly with your finger(s). Pull one end of the tape off with a steady motion. If there is any film on the tape, other than the pattern of cuts you made into the substrate, this finish combination will not have adequate adhesion.

If the test fails, proper sanding of the surface down to bare wood, or chemical stripping of the previous finish will need to be performed before applying Waterlox Original Tung oil finishes.

NEW WOOD APPLICATION

We view finishing a woodworking project as the difference between ‘finishing’ and ‘sealing’ the wood. Moreover, for woodworking projects, the balance is between finishing the wood surface for aesthetics versus finishing a working surface for performance. Therefore, we believe that woodworking projects have more latitude with in which to work.

In the example of finishing wood paneling for use on walls or a ceiling, we would recommend applying 2 coats of Waterlox Original Tung Oil finishes for the project. Was the wood sealed completely? No. But was it finished? Yes. This phenomenon is due to the fact that the walls and/or ceiling will not be walked on or ‘used’; therefore nothing is compromising the adhesion characteristics of the film. If however, the homeowner wanted the paneling to be an even film, then 3 - 4 coats of finish (depending on the hardness of the wood) applied at 500 square feet per gallon per coat would be necessary as discussed in our wood floor finishing guide.

During our long history, we’ve had many inquiries and discussions about using Waterlox Original Tung Oil finishes on woodworking projects. For example, some gun stock refinishers will hand rub 20 coats of finish on the gun stock. In our experience and opinion; however, we believe that it would make more sense to apply 2 - 3 liberal coats of

Waterlox, followed by 1 - 2 hand-rubbed coats versus 20 hand-rubbed coats of finish. Brush coats provide the appropriate protective qualities; hand rubbing provides the look and feel of the desired end result.

TIP

If using a hand-rubbing technique, only use our Waterlox Original Sealer/Finish because the Waterlox Original Satin Finish and High Gloss Finish are not formulated or recommended to be hand-rubbed.

Another example of a more simplistic finishing process was for a furniture maker who had called because he was having problems getting Waterlox to “lie down”. We recommended brushing on 3 liberal coats of Waterlox Original Sealer/Finish followed by 2 hand-wiped coats of finish and the project turned out gorgeous.

How does this affect you, the end-user? In most cases, an old wood finishing adage around for many years is applicable: “You need to build it up to buff it down”. We believe that by brushing on the coats, the film is built up to begin with; then what is done at the end of the finishing process is where the difference lies.

Because Waterlox Original Tung oil finishes are penetrating oil finishes, we believe they should be applied at 125 square feet per quart per coat. The finishes applied in this manner will render a 3 - 4 mil wet film thickness (WFT). Since the finish is approximately 25% solids (for mathematical purposes), each coat will render 1 mil dry film thickness (DFT).

If a hand-rubbing technique is desired, you may need to apply 2 - 4 times the suggested number of coats depending on the amount of WFT that is applied with each coat.

If for example, you would like to apply the finish with a rag and then buff down the coating, even if you apply 20 coats in that manner, it may only equal 3 - 4 brushed on coats.

Finishing methods can be very complicated and far reaching and can include rotten stone, pumice stone, French polish techniques, steel/brass wool, Scotch-Brite®; as well as blending Waterlox to 1 part linseed oil, 1 part turpentine and 1 part ‘ground unicorn horn’ into a “secret method”.

The remaining question is “How does it look?” If it looks great, then its okay for you, but it’s not a method that could be taught to an amateur wood worker.

Because of the complicity of the aforementioned methods, they are hard to duplicate with 100% success and certainty. Wood finishing methods can be an art form, and are not something that everyone can do and do well. Keeping in mind how and why Waterlox was originally developed and formulated, we believe that coats applied with a brush are best.

Following is our suggested brush application method at the spread rate of 125 square feet per quart per coat.

BRUSH METHOD

1. Waterlox may alter the appearance of the wood. Waterlox Original Tung oil finishes are based in Tung oil, which brings out the natural patina of wood. With some species of wood this will dramatically change the appearance and staining may not be necessary. Test an inconspicuous area of your project or a scrap piece of wood from your project before assuming the need for a stain coat. Even if stain is not a consideration, test all intended coats in a test area before beginning the entire project.

2. Preparation of the surface is the most important step in the finishing process. To maximize the penetration of Waterlox Original Sealer/Finish, sand the surface with 100 - 150 grit sandpaper.

3. When sanding is complete, vacuum the surfaces thoroughly. Vacuum with and across the grain. Follow up by vacuuming every surface in the room that could potentially hold dust around the project. (This step can be skipped for smaller woodworking projects.)

4. After vacuuming the surface (if applicable), we recommend cleaning the surface with a rag dampened with mineral spirits (paint thinner) which will attract any remaining dust and dirt. Mineral spirits (paint thinner) is recommended because the Waterlox Original Tung oil finishes are based in this solvent and are therefore compatible with it if any residual is left on the surface. Mineral Spirits (paint thinner) also evaporates slower than other more intense solvents such as lacquer thinner. This step should be completed before finishing the project, between each coat and after doing any sanding (see step 10).

5. Whatever gloss level you choose, we recommend applying Waterlox Original Sealer/Finish as a base. The number of base coats will vary based on the type of wood being finished. As a general rule, most hardwoods will require three base coats. Softer woods like pine, fir or American cherry will require four. Use the wood hardness FAQ (Janka Chart) found on our website at waterlox.com to help determine the hardness of your wood species.

HARDWOODS

red/white oak, walnut, Brazilian cherry, etc.

- Medium sheen (semi-gloss) appearance = 4 coats of Waterlox Original Sealer/Finish applied @ 125 square feet per quart per coat.
- Satin sheen appearance = 3 coats of Waterlox Original Sealer/Finish, followed by 1 coat of Waterlox Original Satin Finish applied @ 125 square feet per quart per coat.
- High gloss appearance = 3 coats of Waterlox Original Sealer/Finish, followed by 1 coat of Waterlox Original High Gloss Finish applied @ 125 square feet per quart per coat.

SOFTWOODS

white pine, yellow pine, red pine, fir, spruce, cherry, etc.

- Medium sheen (semi-gloss) appearance = 5 coats of Waterlox Original Sealer/Finish applied @ 125 square feet per quart per coat.
- Satin sheen appearance = 4 coats of Waterlox Original Sealer/Finish, followed by 1 coat of Waterlox Original Satin Finish applied @ 125 square feet per quart per coat.
- High gloss appearance = 4 coats of Waterlox Original Sealer/Finish, followed by 1 coat of Waterlox Original High Gloss Finish applied @ 125 square feet per quart per coat.

To determine the amount of finish needed (in quarts), simply multiply the square footage of project times the amount of coats needed and divide by 125. We have made it easy for you with our materials calculator found on our website at waterlox.com. Examples are shown below:

Example: 40 square feet of oak: 40 square feet x 4 coats= 160 total square feet ÷ 125 square feet per quart per coat = approximately 1.25 quarts of Waterlox Original Tung oil finish to complete all 4 coats.

Example: 40 square feet of pine: 40 square feet x 5 coats = 200 total square feet ÷ 125 square feet per quart per coat = approximately 1.60 quarts of Waterlox Original Tung oil finish to complete all 5 coats.

TIPS

- Waterlox Original Satin Finish should be stirred thoroughly before use.
- Waterlox Original Tung oil finishes are penetrating oil finishes that are formulated to self-level. Do not wipe on and off the finish.
- BATCHING. If more than one container of finish is needed to complete a coat, the containers should be batched together before starting the coat.

6. Apply all coats liberally with the grain using a quality natural bristle brush at the recommended spread rate. If your intended application method is with a rag versus applied liberally with a brush, this will most likely result in only ½ to ¼ of the recommended film build for each coat. If this is your preferred method of application, double or quadruple the amount of coats applied.

TIP

Your surface may look uneven in appearance after the first or even the second coat of Waterlox Original Sealer/Finish. This is completely normal. Waterlox penetrates deep into the wood and will build up to an even film when applied with the suggested number of coats and coverage.

7. Dip the brush bristles about a third of the way into the finish. To remove excess finish, gently tap the brush against the inside of the can. Do not slap or drag the brush - this motion can cause air bubbles.

8. Begin with long even strokes across the grain. Let only the tip of the brush touch the surface, overlapping each brush stroke slightly. Use only enough brush strokes to completely cover the surface. (Too much pressure on the brush as you are applying the finish will not only cause air bubbles, but will make the finish uneven. To remove air bubbles, brush along the grain with more finish until they disappear.)

9. Using the same brush, but without dipping it in varnish again, brush along the grain of the wood. Begin at one edge and in one continuous movement, carry the brush to the opposite edge. Overlap the strokes slightly until the whole surface is done.

TIP

To finish intricate parts, use light coats to prevent running and a smaller brush or rag to apply the finish.

10. Sanding for adhesion purposes is not required between coats of Waterlox Original Tung oil finishes. This makes Waterlox unique and different from most surface finishes which need abrasion for inter-coat adhesion.

Most surface finishes such as urethanes require the sanding process to create what's called a "profile". A profile is similar to a mountain range microscopically. Failure to sand/abrade between coats of a surface finish can result in delamination of the new coat from the old coat. With Waterlox Original Tung oil finishes, new coats will actually bond with the previous Waterlox coat and becomes part of it rather than a layer on top of it.

Even on a finely sanded wood surface, there are peaks and valleys as well as spots of hard and soft grain. When you apply the first coat of Waterlox, it's like snowfall on the mountains. The snow caps the peaks and begins to fill the valleys. If you sand, you will unseal the caps and there will be less to flow to the valleys when you apply the next coat of finish. This will result in the cap being re-sealed again, and will therefore result in less available finish to flow into the valley. If you do not sand, then the next coat will flow away from the sealed caps and do more to fill the valleys. After the third or fourth coat, this self-leveling process is complete.⁴

ABRASION TECHNIQUES FOR AESTHETIC REASONS:

- Heavy debris or surface imperfections can be removed from the film with 0000 steel wool, 320 grit sandpaper, or a Scotch-Brite® pad (as shown in the Waterlox application video found on our website at waterlox.com).
- Some customers lightly sand with 320 grit sandpaper or 0000 steel wool to smooth out the finish between the second-to-last and last coat of finish. If a light sanding is performed, clean the surface with a lint-free cloth wetted with mineral spirits. Mineral spirits (paint thinner) is recommended because the Waterlox Original Tung oil finishes are based in this solvent and are therefore compatible with it if any residual is left on the surface. Mineral spirits (paint thinner) also evaporates slower than other more intense solvents such as lacquer thinner.
- To remove any dust or particles that may have settled on the finished surface, while the finish is still wet, dip a small artist's brush into the container of finish you are using and wipe it off completely. With the brush's tip, touch the piece of dust. Do not push it into the finish. The dust should stick to the tip of the brush and lift away without leaving a mark.
- Steel wool is an alternative to sandpaper and is easier to use on rounded objects such as table legs and ornamentation.
- Keep in mind if you can visually see any sand marks in the finish before the final coat, these need to be sanded or removed with a finer grit paper or pad before proceeding with the final coat as they WILL be visible. To check for sand or swirl marks, wipe a thin coat of mineral spirits over an area. While still wet it will give you an accurate visualization of what the final coat will look like.
- Steel wool is an alternative to sandpaper and is easier to use on rounded objects such as table legs and ornamentation.
- If you need to smooth between coats, use as fine a grit sandpaper as possible. NEVER smooth after the first coat of finish.

11. Allow each and every coat to dry for 24 hours. Once the last coat of finish has been applied, allow it to cure for 72 – 96 hours.

CURING

Even though the recommended dry time is 24 hours, Waterlox Original Tung oil finishes completely cure in 30 - 90 days.

There are two basic steps to the drying and curing of a Waterlox Original Tung oil finish:

1. The first step is the evaporation of the solvent "carrier" system. The evaporation of solvent usually occurs in the first 2 - 4 hours with proper cross-ventilation techniques.
2. The second step is the curing of the solids system, which is comprised of the Tung oil and resin. The solids system completes 95% - 98% of its cure cycle in 7 – 14 days with proper ventilation; full cure, film hardness and chemical resistance properties are achieved in 30 - 90 days with continued adequate ventilation.

As discussed above, the solvent portion of our formula is gone within 2 - 4 hours of application with proper cross-ventilation techniques. After that, any odor that remains is likely from the Tung oil itself. Tung oil is pressed from the nut of the Tung tree and is not petroleum based. Although some may notice a Tung oil odor, it is not toxic³. To help determine the source of the odor, compare the odor you're noticing to any denomination of US paper currency. Tung oil-based inks are used to print US paper currency and the odor will resemble the odor of the solids portion of our finishes.

CLEANING AND CARE

After the Waterlox Original Tung oil finish has dried and cured for at least 7 days, cleaning may be performed. For smaller wood working projects, we recommend using a microfiber duster on the surface as needed.

When a heavier cleaning is required for larger projects we suggest any of the following methods:

- Waterlox Original Cleaner Concentrate (following the directions on the label). We do NOT recommend the use of other wood coating manufacturer's cleaners as these have been proven to damage all types of wood finishes including Waterlox Original Tung oil finishes; or
- A solution with a maximum mixture of 1 - 2 oz. of white vinegar to 2 gallons of warm water; or
- Non-abrasive diluted household cleaner (stay away from ammonia and/or bleach products); or
- Murphy's Oil Soap® can be used, but will tend to reduce the gloss by leaving a film on the surface.⁵

Avoid ammonia-based and bleach-based cleaning products like Lysol®, Fantastik®, 409®, Windex® (ammonia and bleach-based products will soften the oil finish if used), and products containing wax or acrylics, and try to prevent water from pooling or standing on the surface for long periods of time.

We believe wax creates time-consuming maintenance issues, scuffs easily, leaves water spots and attracts dirt. Wax also makes it difficult to recoat your wood surface with Waterlox when necessary. Even though waxes are compatible with Waterlox finishes, we don't recommend using them for the aforementioned reasons.

TIPS

- After cleaning any surface finished with Waterlox Original Tung oil finishes, rinse with clear water.
- Avoid puddling water for long periods of time; wipe up spills immediately.
- For bathrooms, **do not** let soap sit directly on the finish; wipe up excess soap immediately.

FURNITURE

Newly finished Waterlox furniture will last and last. No waxing is required. Damp dusting at reasonable intervals will retain the original beauty of the finish. Do not use detergent unless you rinse it thoroughly with clean water. Waterlox finished furniture is resistant to moisture, common household acids, alcoholic beverages and boiling water.

RE-COAT AND MAINTENANCE

One of the other main benefits of Waterlox Original Tung oil finishes is that they are tough enough to protect against moisture, hot beverages, fruit juices, alcoholic beverages, and are easy to maintain. As your surfaces age, complete the following to freshen it up:

1. Wash the surface with a neutral cleaner such as TSP (trisodium phosphate) or Spic-n-Span® and water.
2. Follow with a clear water rinse.
3. Lightly sand the surface if there is ground-in dirt with 320 grit sandpaper or 0000 steel wool.
4. Wipe on/feather in an additional even coat of the finish used as the previous topcoat.
5. Let dry for 48 - 96 hours before use.

PRODUCT INFORMATION HOTLINE

To answer any wood finish questions or for more information visit our website at www.waterlox.com or call 800.321.0377, Monday – Friday, 9 am – 4 pm EST (excluding holidays).

CAUTIONS

- For MSDS information, visit the technical download page within the product section of our website at waterlox.com.

- DANGER! CONTAINS ORGANIC SOLVENTS. COMBUSTIBLE LIQUID AND VAPOR. HARMFUL OR FATAL IF SWALLOWED. USE WITH ADEQUATE VENTILATION. KEEP OUT OF REACH OF CHILDREN.

FOOTNOTES

¹Waterlox Original Tung oil finishes are water resistant when applied at the proper spread rate and number of coats.

²We are asked quite often if our Waterlox Original Marine finishing system is recommended for surfaces near water. The simple answer is “no”, our interior Tung oil finishing line will give you the water resistance needed for these type of applications. It is true that our Waterlox Original Marine finishing products are water resistant; however, they are primarily recommended for use outdoors in direct UV as they are formulated as a traditional spar varnish finish system.

³Tung oil is non-toxic and food-safe, although, Tung oil is pressed from the nut of the Tung tree which would be considered a tree nut oil. If you or someone who will be living with the finish has a tree nut allergy, consider whether or not this is a factor in finishing your wood project.

⁴This is the most important reason to obtain the recommended spread rate of 500 square feet per gallon per coat.

⁵Residue of any type including Murphy’s Oil Soap® should be removed by a mixture of TSP (trisodium phosphate) and water, followed by a clear water rinse before re-coating.