Waterlox Urethane Application Guide

WHERE TO USE

Waterlox Urethane finishes are the ultimate in clear polyurethane transparent finishes for indoor use. Our urethane finishes are processed with the highest urethane content available on the market today. They are also soybean oil-based instead of linseed oil-based, giving them the ability to form a tough and hard finish without the typical yellowing or ambering characteristics of most other urethane products containing linseed oil. The XL-88 Gloss is so clear you can read the date off of a dime on the bottom of the can.

All Waterlox urethanes are recommended for floors and other interior surfaces and will yield a clear, pale color.

Feature	Benefits
Soybean Oil-based Urethane	Easy to apply Water resistant Dries fast Hard tough film
Versatile	For floors, wood work, trim, furniture, window casings, paneling, ceilings, beams, all interior wood surfaces
Beauty	Clear, transparent film

CHOOSING YOUR FINISH

There is no right or wrong choice in terms of performance between the two urethane finishes. All Waterlox Urethane Finishes offer a durable protective finish that is tough, crystal clear and rock hard.

Waterlox Satin XL89 Urethane

- Produces a satin sheen appearance.
- Our lowest gloss level manufactured.

Waterlox Gloss XL88 Urethane

- Produces a gloss sheen appearance.
- Our highest gloss level manufactured.

COVERAGE/THINNING

One gallon covers 500 square feet per gallon. No thinning necessary.

DRY TIME

Our general rule of thumb is to wait 6 - 12 hours between coats. Poor ventilation, high humidity or cool temperatures may increase dry times.

VENTILATION

Proper ventilation and adequate 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 6-12 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 aide the drying process by pulling in fresh air loaded with oxygen, but it will also 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,
- During the curing process (first 24 hours after each coating is applied), and
- Continue to ventilate the area for 7 days after the final coat is applied.

Examples of poor ventilation:

- Ceiling fans do not bring in fresh air from an outside source, even if windows are opened. They circulate stale air around the room. In fact, ceiling fans have a tendency to direct too much air downward on the surface of the freshly applied coating and can potentially “skin” over the fresh coat. This slows down the drying time because the solvent is trapped beneath the skin, causing an improper cure.
- Heating and air conditioning do not provide enough ventilation. Opened windows with air being exchanged, replenishes the room with fresh oxygen and vents the evaporating solvents.
- Closed doors cut off airflow in a room even if a window fan is in place. If the window fan is working properly, solvent odors should be exhausted and will not enter connected rooms.
- Closets are typically the most difficult areas to ventilate – leave closet doors fully open.

TIPS

- Always read the Waterlox label instructions closely before using, including information related to the use of a respirator while applying the finish.

APPLICATION TOOLS

For safety: rubber gloves, goggles and a respirator fitted with an organic cartridge.
For floors: flat applicator block and pad, plus one refill pad to complete each coat and a paint roller pan or five-gallon pail. Be sure to use a pan or pail that allows your applicator to become immersed in the finish.
A natural bristle paint brush.
Mineral spirits, turpentine or paint thinner.
A vacuum.
Tack mop.

TIP

- To make your project even easier, order your application tools from our website at waterlox.com. It has many of the tools you'll need to complete your project.
- Before using a new applicator, be sure that any loose hairs are removed or cleaned from the applicator. This can be achieved by the following methods:
    - Wrap the applicator with masking or painter's tape and then remove the tape completely, or
    - Put new and unused applicator pads in the dryer for a spin, or
    - Use a lint roller on the applicator pad until the lint-roller paper does not pick up any further hair or remains sticky.

Cleaning/disposal options for applicator pads and paintbrushes between coats:

Applicator Pads

1. Disposal. Allow the applicator pad to dry and dispose of it in a proper trash receptacle. Once the applicator pad has dried it is inert and non-toxic. Use a new applicator pad for each subsequent coat, or
2. Cleaning. Clean the applicator pad completely:
    - Using mineral spirits or paint thinner. This may not be practical, as it will require quite a bit of thinner to completely rinse out all of the coating.
    - Rinse the applicator pad with paint thinner, squeezing out as much of the thinner as possible between rinses (probably 2 or 3 times) and then wrap in it a plastic bag or tin foil. Wrapping it in this manner will prevent it from being exposed to oxygen.

Paint Brushes

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.

TIP

NEVER just soak the applicator or brush in paint thinner, the Waterlox will gel and you will be applying what looks like little seeds on your next coat.

CLEAN UP & STORAGE

CLEAN UP

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

STORAGE TIPS

Keep containers of Waterlox Urethane finishes closed when not in use and keep in a cool, dry place. If stored properly, an unopened can of Waterlox Urethane 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 Urethane 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 and replace 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.
- "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.

Generally speaking, Waterlox Urethane finishes 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.

Waterlox Urethane finishes can also be used as a top coat over our Waterlox Original Sealer/Finish, over a stain or on its own. Our Tung oil-based Original Sealer/Finish will penetrate further into the wood pores to set up a solid base for the Urethane top coat. This system will also yield a rich patina brought out by the Tung oil-based sealer.

TIPS

- If staining a wood project, do not skip any of the recommended coats of Waterlox as described in this project guide.
- 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. And 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 Sealer/Finish or our Waterlox Urethane finishes. NEVER apply Waterlox Original Sealer/Finish or Waterlox Urethane finishes 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 Urethane 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
Waterlox Urethane 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 the stain coat(s) if used or Waterlox Original Sealer/Finish). Strip previously finished surfaces to bare wood, and then apply as described under "New Wood Application".

NEW WOOD APPLICATION
1. Waterlox may alter the appearance of the wood. Test an inconspicuous area or a scrap piece of wood from your project before beginning the entire project.

2. Preparation of the surface is the most important step in the finishing process. In order to achieve the desired results, the floor must be properly sanded prior to finishing. Because of the importance of this step, hiring a professional to do the sanding could be money well spent. To maximize the adhesion of a Waterlox Urethane finish, final sanding should be done with 80 – 100 grit sandpaper.

3. When sanding is completed, vacuum the floor thoroughly. Vacuum with and across the grain. Follow up by vacuuming every surface in the room that could potentially hold dust, including doors, walls, mantles, windowsills and lights.

4. Tack the floor using a mop dampened with mineral spirits (paint thinner), which will attract and remove any residual dust and dirt. Mineral spirits (paint thinner) is recommended because the Waterlox Urethane 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.

TIPS
- When the mineral spirits is wet, it will provide a preview of what your finished surface will look like and allow you to address any sanding or substrate imperfections.
- As you're preparing the surface, take a moment to plan where you'll begin and where you'll exit the room.

5. If natural color or fillers are being used, be sure to coat with Waterlox Original Sealer/Finish before applying your first coat of Waterlox Urethane.

As a general rule, most hardwoods will require two coats of our Waterlox Urethane Finishes. Softer woods like pine, fir or American cherry will require three. Use the Wood hardness FAQ (Janka Chart) to help determine the hardness of your wood species. Below is a breakdown of the number of coats to apply to a larger surface such as a floor.

HARDWOODS
red/white oak, walnut, Brazilian cherry, etc.
- Satin sheen appearance = 2 coats of Waterlox Satin Urethane XL89 applied @ 500 square feet per gallon per coat.

- Gloss sheen appearance = 2 coats of Waterlox Gloss Urethane XL88 applied @ 500 square feet per gallon per coat.

SOFTWOODS
white/red pine, fir, spruce, American cherry, etc.

- Satin sheen appearance = 3 coats of Waterlox Satin Urethane XL89 applied @ 500 square feet per gallon per coat
- Gloss sheen appearance = 3 coats of Waterlox Gloss Urethane XL88 applied @ 500 square feet per gallon per coat.

To determine the amount of finish needed, simply multiply the square footage of the hardwood floor times the amount of coats needed and divide by 500. We have made it easy for you with our materials calculator located on the website, and examples are shown below:

Example: 1,500 square feet of oak: 1,500 square feet x 2 coats= 3,000 total square feet ÷ 500 square feet per gallon per coat = 6 gallons of Waterlox Urethane finish.

Example: 1,500 square feet of pine: 1,500 square feet x 3 coats = 4,500 total square feet ÷ 500 square feet per gallon per coat = 9 gallons of Waterlox Urethane finish.

TIPS

- Waterlox Satin Urethane XL89 requires stirring before and during use.
- 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. Use a quality natural bristle brush for cutting in around the room. Be sure to apply the finish with the grain of the wood and only cut in an area of enough size to provide adequate time to complete that area before it begins to set up.

7. For floors, apply all coats evenly with the grain using an 8" – 12" flat applicator.

APPLICATION TIPS & TRICKS:

- To avoid lap marks, maintain a wet edge by overlapping sections you previously finished by several inches. Be sure to feather the finish every time you start or stop.
- Also, be sure to apply only light pressure to the applicator while finishing. Too much pressure can result in bubbles in the finish or an uneven coating.

8. Sanding between coats is necessary for adhesion purposes. Failure to do so can result in delamination of the new coat from the old coat.

ABRASION TECHNIQUES:

- Abrading, screening or sanding between coats is necessary for adhesion with a 3M® maroon pad or a 110 grit screen.

CURING
The first 7 days are the most critical after applying Waterlox Urethane finishes. Please adhere to the following practices:

- After the last coat is applied, we advise staying off the floor for at least 24 hours. After this time, the floor may be used for sock traffic only. No shoes or bare feet (oils from the skin may dull the surface).
- During the first 7 days keep room/ambient temperature above 70° F if possible. Continue to cross-ventilate the room to help replenish the required oxygen needed to cure the finish.
- Avoid common household spills in newly finished rooms for the first 7 days (cleaning spills with cleaners may damage or dull the finish as the film has not obtained its full chemical resistance properties).
- Red rosin paper or non-abrasive throw rugs can be used in high traffic areas after 48 hours but should be removed each night, as the finish needs direct oxygen exposure to cure.
- After 7 days, (depending on drying conditions) replace furniture and throw rugs. Be sure to use felt pads on the bottom of all furniture to help prevent scratching of the finish. Some woods, such as American cherry and pine, oxidize on their own and will naturally darken during the first month. To achieve a consistent color across the entire floor, you may not want to place area rugs on the floor during this period. We recommend that you consult the wood manufacturer.

CLEANING AND CARE

After the Waterlox Urethane finish has dried and cured for at least 7 days, cleaning may be performed. For floors, we recommend using a broom, damp mop or microfiber mop on the surface as needed.

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

- Waterlox Original Cleaner Concentrate (following the directions on the label). Waterlox Original Cleaner Concentrate. It neutralizes harsh residues left behind by household cleaners and dissolves hard water films without leaving a soapy haze.
- 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 damp mop 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).

TIP

After cleaning any surface, rinse with clear water.

Avoid ammonia-based cleaners 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 maintenance issues, scuffs easily, leaves water spots and attracts dirt.

RE-COAT AND MAINTENANCE

Once the surface is worn, care will need to be taken to screen the entire surface and re-coat. Spot repairs are not possible with urethane finishes.

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.