

## Instructions General Finishes Exterior 450 Water Based Wood Stain

### Step 1: Preparation of Raw Wood for Water Based Stain

Before applying stain, all raw wood projects require preparation sanding, and all existing finishes require prep cleaning and sanding. *If you skip this critical step, your finish may fail.*

#### Prep Sanding for Raw Wood Projects

See our video: [How to Prep Sand Raw Wood](#)

1. Sand open-grain wood (e.g., oak, ash, mahogany, parawood) with 120-grit sandpaper, followed by 150-grit, then 180-grit.
2. Sand closed-grain wood (e.g., cherry, pine, maple, birch, alder) with 150-grit sandpaper followed by 220-grit.
3. Remove dust with a vacuum, compressed air, an oil-free tack cloth or a water-dampened rag.
4. Do not over-sand with fine-grit sandpapers; this will close and seal the wood grain, preventing ideal color absorption.
5. Do NOT use steel wool with water-based finishes; the particles will get trapped in the finish and rust.

#### Prep Sanding for Existing Finish

1. Remove any existing finish by sanding with 120-grit-sandpaper & scuffing with a wire brush if needed.
2. Remove dust with a vacuum, compressed air, an oil-free tack cloth or a water-dampened rag.

#### Reducing Grain Raise on Raw Wood

To reduce grain raise, dampen the wood with water after prep sanding. Let dry completely, then lightly sand with fine-grade (220-320) foam sanding pad.

### Step 2: How to Apply General Finishes Exterior 450 Stain

#### General Finishes Exterior 450 Water Based Wood Stain Application Steps

**NOTE:** Exterior 450 stain is not intended for decks. It can be used on tabletops that do not receive direct exposure to sun and rain. As with all fine furniture finishes, wipe up spills in a timely manner to protect the finish.

1. [Watch 450 Exterior Stain overview video here.](#)
2. Stir stain to reincorporate solids that have settled to the bottom of the can before and throughout the application process.
3. Thin as desired with distilled water; start with 5%, increase up to 10% by volume.
4. Increase open time, if needed, with up to 5% [General Finishes Extender](#) if allowed by local regulations. GF Extender will improve flow and leveling and increase open time, which is helpful in dry climates. **California Residents:** Adding more than 2% of GF Extender will make the products non-compliant per SCAQMD Regulations. GF assumes no liability for the improper use of these products.
5. Test your complete finishing process before starting. Stain color is affected by variances in wood and deepened by the application of topcoat.
6. Divide your project into manageable sections: top, side, drawer, door, table seam.

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### 7. Hand-Application Over Raw Wood:

- Apply a LIBERAL amount of stain to ensure easy workability using a synthetic bristle brush, foam brush, pad applicator or short-nap roller. If not, enough stain is used, the surface may dry too quickly, causing an uneven appearance. On large projects, leave wet edge between sections to prevent lap lines between sections.
- Wipe off the excess evenly with the grain using quality paper towel or shop towel. Check for missed spots and lap marks before moving to the next section. Do NOT use cotton t-shirts to wipe away stain because they will "push" the stain around and not absorb it.
- Immediately correct lap marks by rewetting the entire working area with stain and wiping off the excess.
- Pull excess stain out of corners and detail with a synthetic bristle brush.
- **Let the stain dry 2+ hours** when applying 1 coat in ideal conditions, 70°F/20°C, 50-70% humidity. **Increase dry time if:**
  - Humidity is over 80%
  - A second coat is applied
  - Thick coats are applied
  - To accelerate drying in humid conditions add [General Finishes Accelerator](#) to Exterior 450 Stain before applying and work in a space with good ventilation and air movement. If you decide to re-coat before the recommended time, test dryness.

### 8. Spray Application:

- Before spraying, strain topcoat through a fine-mesh filter.
- Spray wet films at 3-5-mil thickness. HVLP: 1.1mm-1.3mm spray tip, medium air cap. Verify tip sizes with your equipment supplier. [See our general guide for spray tip sizes](#). Wear a full filter respirator (NIOSH/MSHA-approved) and, if spraying in an interior space, make sure there is good ventilation. Keep your gun at a 90° angle, 6-8" from the surface. On large, flat areas, use wet, even patterns 6-8" wide. For narrow surfaces, reduce the fan pattern to 2-3" wide to reduce overspray. Overlap each pass 50% for even coverage. Wipe back the excess with an absorbent cloth. [Read here for more information on spraying techniques](#).
- **Let the stain dry 2+ hours** in ideal conditions (50-70% humidity, 70°F). **Increase dry time if:**
  - Humidity is over 80%
  - Additional coats are applied
  - Thick coats are applied
  - To accelerate drying in humid conditions add General Finishes Accelerator to Exterior 450 Stain before applying and work in a space with good ventilation and air movement. If you decide to re-coat before the recommended time, test dryness.

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- Optional: apply a second coat to deepen the color. Apply no more than 2 coats.
- Finish with 3 coats of General Finishes Exterior 450 Topcoat.

**Warning:** Do not use water-based products with Linseed Oils or Danish Oils.

### Step 3: Topcoat Over Exterior 450 Stain

**Always** seal General Finishes Exterior 450 Stain with 3 coats exterior-rated topcoat. We recommend [General Finishes Exterior 450 Topcoat](#), which is formulated to be compatible with Exterior 450 Stain.

Exterior 450 topcoat and stain are not intended for decks. It can be used on tabletops that do not receive direct exposure to sun and rain. As with all fine furniture finishes, wipe up spills in a timely manner to protect the finish.

Exterior 450 Topcoat is designed to allow water to permeate the finish and, as it dries, the water releases back out to allow the finish to tighten down again.

Horizontal surfaces and uncured surfaces with sitting water may cloud or blush temporarily as the finish dries. Once fully cured, any blushing that occurs should be minimal.

### Cleanup of Water Based Products

Application tools and materials containing water-based products can be cleaned with soap and water immediately after use.

#### Product Spills

Spills may be able to be removed from fabric and carpet if cleaned immediately with soap and water.

### Storage of Water Based Products

*Please be mindful of the way water-based products are stored and how long they have been in storage. They are not a forever product.*

#### Life of Product

Water-based products do not last forever, even when unopened. General Finishes products are **best used within 1 year**. However, the life of the product may be extended several more years with proper care and storage (see Storage Tips below).

Water-based products **can last 3-5 years if** the can is unopened, in good condition and stored in correct temperatures.

Product that is 3 years old will not look like product that is 6 months to 1 year old. You will see more stratification or separation as the product ages. Always stir thoroughly before using.

#### Foul Smell

If your product has a foul smell, it is contaminated and no longer in useable condition.

#### Clumps & Settling

Gravity can cause some solids to settle on the bottom of the can and slight separation on the top. This is normal. If working with older product stir with a paint mixing attachment on a drill.

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If the solids dissolve and clumps smooth out after mixing from the bottom, the product is in good condition for use.

Inability to reincorporate large, chunky lumps after stirring for several minutes is an indication that the product has frozen and can no longer be used.

### Storage Tips

See video tutorial: [Tips on Storing Leftover Finishes](#)

Water-based finishes crystallize and form a skin due to evaporation when the air-tight seal on a can is broken at first use. The following best practices will increase the life of your product:

1. Pry open sealed lids with a paint can opener by hooking under the lid's rolled edge. The use of a screwdriver can disfigure the rim and lid, impairing a complete seal.
2. Keep lid closed while working. Pour what you will use into a bowl, paper cup, or plate, and close can lid as you work.
3. Clean the chime of the can thoroughly with a paper towel before closing to create a complete seal. Product falling into the chime can be minimized by using a pouring lid, such as Fitsall. Avoid wiping used brushes on the lid.
4. Pound the lid in place using a rubber mallet to avoid distorting the chime or lid. Dents in the lid from direct contact with a hammer can impair a complete seal. Alternatively, place a flat piece of wood over can lid and firmly pound shut.
5. Store in moderate temperatures. Avoid temperatures below 50°F/10°C or above 100°F/26°C. Keep from freezing. Frozen and heat-damaged product cannot be revitalized. Temperature-controlled spaces, such as a basement, are ideal for storage. Do not store product in an attic, garage, in direct sunlight, or next to something warm like a water heater or furnace.
6. Store can upside down to create a liquid seal, minimize evaporation and reduce the chance of crystallization. Decant remaining product from the can before stirring.
7. Decant leftovers to a smaller container when the finish is almost used up. Alternative storage containers for water-based products are plastic FIFO bottles or glass bottles. Do not fill metal-lidded containers completely to prevent them from rusting.

### The following water-based product mixtures can be stored:

1. Product thinned with up to 15% [General Finishes Extender](#) or [General Finishes Accelerator](#) can be stored, with the exception of thinned [General Finishes Water Based Wood Stain](#).
2. Mixtures involving colors & sheens within the same product line, such as:
  - High Performance Satin + High Performance Gloss
  - Snow White Milk Paint + Coastal Blue Milk Paint
  - Amber Dye Stain + Merlot Dye Stain

### The following product mixtures should NOT be stored:

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- Any water based product with thinned tap water; water often contains bacteria that will adversely affect stored paint.
- Topcoat + Stain or Paint
- Milk Paint + Chalk Style Paint
- Water Based Wood Stain + Dye Stain

## Warnings and Warranties

### Exterior 450 Stain Warnings and Warranties

#### Compatibility

Do not use water-based products with Linseed Oils or Danish Oils.

#### Limited Warranty

General Finishes products must be tested to your complete satisfaction before using. General Finishes will not be responsible for color satisfaction, misapplication, nor compatibility with other manufacturer's products. General Finishes will be responsible only for the cost of our products, and not for costs such as labor, damage, or project replacement.

#### Contamination and Compatibility

Our finishes are engineered as a system and are compatible with each other. General Finishes cannot guarantee an ideal refinish when applying our products on top of or combined with another company's products or over surfaces that have been in contact with waxes, polishes or sprays containing contaminants such as silicone. Test for adherence and aesthetics before beginning.

**FIRST AID:** Seek immediate medical attention if symptoms occur due to the following. **EYE CONTACT:** Remove any contact lenses. Flush eyes with water for 20+ minutes while lifting upper and lower eyelids. **SKIN CONTACT:** Wash thoroughly after handling. **INHALATION:** Move to fresh air and loosen clothing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. **INGESTION:** Call physician immediately. Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

#### Prop 65 WARNING:

- Black Walnut, Butternut, Cedar, Chestnut, Olde Cherry, Red Mahogany:  
This product can expose you to chemicals including Carbon black, respirable powder, Crystalline silica, respirable powder, which are known to the State of California to cause cancer, and N-methyl-2-pyrrolidone, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [California Proposition-65](#).
- Coffee Bean:  
This product can expose you to chemicals including Ethylene oxide, 4-Methylpentan-2-one, which are known to the State of California to cause cancer and birth defects or other reproductive harm.

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This product can expose you to chemicals including Carbon black, respirable powder, Crystalline silica, respirable powder, Acetaldehyde, 1,4-Dioxane, which are known to the State of California to cause cancer, and N-methyl- 2-pyrrolidone, Ethanediol, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to [California Proposition-65](#).

- Natural Base, Sugar Maple:  
This product can expose you to N-methyl-2-pyrrolidone, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [California Proposition-65](#).

**WARNING:** Keep out of reach of children. Do not swallow. Avoid contact with eyes. Keep container tightly closed when not in use. Wash thoroughly after handling.