

Instructions - Water Based Wood Stains

Step 1: Preparation for Water-Based Wood 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.*

Preparation 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.
- **Do not over-sand** with fine-grit sandpapers; this will close and seal the wood grain, preventing ideal color absorption.
 - **Do NOT use steel wool** with water-based finishes; the particles will get trapped in the finish and rust.

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.

Preparation for Projects with an Existing Finish

For high-use areas with heavy grime build-up and oil from hands, give your project a deeper cleaning. See our video: [How to Prepare Existing Finishes](#)

1. **Scuff clean** with a Scotch-Brite™ pad or maroon synthetic steel wool and a 50:50 mix of denatured alcohol and water.
Avoid cleaning with products containing phosphates (salt), which can linger in the substrate and produce a white haze. If your project requires a deeper cleaning, see *Power Prep Cleaning Highly Used Existing Finishes* below.
2. **Dry** 1-2 hours.
3. **Sand lightly** with a fine-grade (220-320-grit) foam sanding sponge or 400-grit sandpaper.
4. **Remove dust** with a vacuum, compressed air, an oil-free tack cloth or a water-dampened rag.
5. **Let dry** completely before applying General Finishes product.

Power Prep Cleaning Highly Used Existing Finishes

See our video: [How to Power Prep Existing High Use Finishes for Stain or Paint](#)

1. **Scrub clean** with a detergent, such as Spic and Span or Dawn, using a Scotch Brite™ pad.
2. **Rinse well** with water.
3. **Scrub clean** with a Scotch Brite™ pad and a 50:50 mix of denatured alcohol and water. Dry 1-2 hours.
4. **Sand lightly** with a fine-grade (220-320) foam sanding pad.
5. **Remove dust** with a vacuum, compressed air, an oil-free tack cloth or a water-dampened rag.
6. **Let dry** completely before applying General Finishes product.

Alternative Cleaning Solutions for Existing Finishes (Not as aggressive or effective as denatured alcohol; requires rinsing.)

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1. 50:50 mix of bleach and water
2. 50:50 mix of vinegar and water
3. Mineral spirits can be used when working with water-based products, but only if the surface is thoroughly rinsed and allowed to dry for 72 hours.

Step 2: How to Apply General Finishes Water-Based Wood Stain

General Finishes Water Based Wood Stain Application Steps

1. [Watch product overview video here.](#)
2. [Watch the application video here.](#)
3. Work in a **well-ventilated area**.
4. **Stir** stain to reincorporate solids that have settled to the bottom of the can before and throughout the application process.
5. Thin as desired with distilled water; start with 5%, adding up to 10% by volume.
6. 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.
7. An initial coat of [General Finishes Pre-Stain Conditioner Natural](#) can improve color uniformity over difficult-to-stain wood species such as pine. However, it will limit color absorption, so a darker stain may be required to get the depth of color you want. NOTES on softwoods such as Pine, Pawlonia, or Poplar, the use of Pre-Stain Conditioner will reduce blotchiness but not remove it entirely.
8. **Test** your complete finishing process beforehand. Stain color can be affected by variances in wood, room lighting, and deepened with the application of topcoat.
9. **Surface preparation** is essential. See "Step 1: Preparation for Water Based Wood Stain."
10. **Divide your project** into manageable sections: top, side, drawer, door, table seam.

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 roller. Work quickly.
If not enough stain is used, the surface may dry too quickly, causing an uneven appearance.
On large projects, leave a wet edge between sections to prevent lap lines.
- **Stain one complete section** at a time.
- **Wipe off the excess** evenly with the grain using cloth or an absorbent paper 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.
- **Pull excess stain out of corners and details** with a synthetic bristle brush.
- Immediately **correct lap marks** by rewetting the entire working area with stain and wiping off the excess.
- **Let the stain dry** 2+ hours in ideal conditions when using a WATER-BASED topcoat: 50-70% humidity, 70°F/20°C before adding a second coat (optional) and before adding topcoat. **Be sure to allow adequate**

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dry time. If in doubt, wait longer. When using with an OIL-BASED topcoat, allow 24 hours dry time.

Increase dry time if:

- Humidity is over 80%
- 3+ coats are applied (not recommended)
- Thick coats are applied
- increase to 24 hours if applying an oil-based topcoat
- To accelerate dry time in humid conditions, add [General Finishes Accelerator](#) 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.

Spray Application over Raw Wood:

- Before spraying, **strain** topcoat through a fine-mesh filter.
- **Safety:** Wear a full filter respirator (NIOSH/MSHA-approved) and work in a ventilated space.
- **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.](#) 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 25-50% for even coverage. [Read here for more information on spraying techniques.](#) Spray a LIBERAL amount of stain to ensure easy workability. If not, enough stain is used, the surface may dry too quickly, causing an uneven appearance. On large projects, leave a wet edge between sections to prevent lap lines during application.
- **Pull excess stain out of corners and details** with a bristle brush.
- Immediately **correct lap marks** by rewetting the entire working area with stain and wiping off the excess.
- **Let the stain dry** 2+ hours in ideal conditions: 50-70% humidity, 70°F/20°C before adding a second coat (optional) and before adding topcoat. **Be sure to allow adequate dry time.** If in doubt, wait longer. **Increase dry time if:**
 - Humidity is over 80%
 - 3+ coats are applied (not recommended)
 - Thick coats are applied
 - To accelerate dry time in humid conditions, add General Finishes Accelerator 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.

Hand-Application over Existing Finish:

See our video: [How to Update Existing Finishes with Water Based Wood Stain](#)

- **Stir** contents well.
- **Prepare surface** well. See Existing Finish Prep instructions in "Step 1: Preparation for Water Based Wood Stain."
- **Apply** stain with a foam brush or paint pad. Feather out uneven areas and pull excess stain from corners using a bristle brush. Discharge accumulated stain from the brush onto a dry paper towel as you work.

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- **Let the stain dry** 2+ hours before GF water-based topcoat in ideal conditions: 50-70% humidity, 70°F/20°C before applying a second coat (optional) and before applying topcoat. **Be sure to allow adequate dry time.** If in doubt, wait longer.
Increase dry time if:
 - Humidity is over 80%
 - 3+ coats are applied (not recommended)
 - Thick coats are applied
 - Applying over products from other brands
 - Layering General Finishes water- and oil-based products:
 - Water over oil: Let oil-based products dry 72+hr before applying water-based products
 - Oil over water: Let water-based products dry 24+hr before applying oil-based products
 - To accelerate dry time in humid conditions, add General Finishes Accelerator 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.
- 1. **Topcoat is required.** Finish with 3 coats of General Finishes topcoat. You can remove any grain raise after applying the first coat of topcoat. [Watch this video for more information on grain raise.](#) See "Step 3: Topcoat Over Water-Based Stain."

Step 3: Topcoat Over Water-Based Stain

Always seal **General Finishes Water Based Wood Stain**, **General Finishes Dye Stain** and **General Finishes Enduro Ready-To-Match (RTM) Water Based Wood Stain** with 3 coats of topcoat. More coats will not improve durability.

Grain Raise

After the first coat of topcoat has dried, you can knock down grain raise by lightly sanding with a 220 sanding pad. [Watch Grain Raise video here.](#)

Recommended Water-Based Topcoats

[General Finishes High Performance](#) can be applied by hand or sprayed; [General Finishes Enduro Clear Poly](#) is spray-only. Both topcoats dry clear and are great for high-use surfaces, such as kitchen cabinets and tabletops. [General Finishes Flat Out Flat](#) is our flattest topcoat, suitable for projects that do not receive major wear.

Recommended Oil-Based Topcoats

When sealing with General Finishes oil-based topcoats, [General Finishes Arm-R-Seal](#) and [General Finishes Gel Topcoat](#), let water-based stain dry a minimum of 24 hours first. Oil-based topcoats amber increasingly over time.

[Creative Finishing Techniques Using Water-Based Wood Stain](#)

Color Adjustments

1. Add up to 50% Pre-Stain Conditioner Natural to Water Based Wood Stain to lighten the color.
2. Apply a second coat to deepen the color but no more than 2 coats.

Wood Stain as a Glaze

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MATERIALS NEEDED:

- **General Finishes Water Based Wood Stain:** Your choice of color
- [General Finishes High Performance Topcoat](#)

SAMPLE MIX:

Water Based Wood Stain + 10% High Performance Topcoat

Aged/Varnish Glaze

MATERIALS NEEDED:

- General Finishes Water Based Wood Stain: Your choice of color
- General Finishes High Performance Topcoat

SAMPLE MIX:

Water Based Wood Stain + High Performance Topcoat 50:50 ratio

Custom Colors

MATERIALS NEEDED:

- General Finishes Water Based Wood Stain: Your choice of color
- General Finishes Pre-Stain Conditioner Natural

SAMPLE MIXES:

- Create additional colors by mixing Water Based Wood Stains and Dye Stains.
- Lighten Water Based Wood Stains by diluting with General Finishes Pre-Stain Conditioner Natural

Toning

- Water-Based Wood Stains Can be used for toning. Mix no more than 5%-10% stain to topcoat. Spraying lays down a more even coat, so slightly more stain can be used than when brushing.

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**

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year of the manufacture date listed on the can. However, the life of the product may be extended 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.

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 crystalize 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](#).

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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:

- 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

Water Based Wood 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:

- Antique Brown, Antique Oak, Black, Black Cherry, Brown Mahogany, Cabernet, Espresso, Hickory, Onyx, Pecan, Provincial, Sedona, Tobacco, Walnut:
WARNING: This product can expose you to Ethylene oxide, which is known to the State of California to

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cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Hydrazine, 1,4-Dioxane, Propylene oxide, which are known to the State of California to cause cancer, and Ethanediol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [California Proposition-65](#).

- Graystone, Graphite, Whitewash:
WARNING: This product can expose you to Ethylene oxide, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Hydrazine, 1,4-Dioxane, Propylene oxide, Titanium dioxide, which are known to the State of California to cause cancer, and Ethanediol, 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:

- Antique Brown, Antique Oak, Black, Black Cherry, Brown Mahogany, Cabernet, Espresso, Hickory, Onyx, Pecan, Provincial, Sedona, Tobacco, Walnut, Water Based Wood Stain Base:
CAUTION: MAY CAUSE EYE IRRITATION.
- Graystone, Graphite:
WARNING: HARMFUL IF SWALLOWED. CAUSES EYE IRRITATION.
- Whitewash:
WARNING CAUSES EYE & SKIN IRRITATION.

WARNING:

- Antique Brown, Cabernet, Hickory, Onyx, Provincial, Sedona, Tobacco:
Keep out of the reach of children. Avoid contact with eyes. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
- Antique Oak, Black, Black Cherry, Brown Mahogany, Espresso, Pecan, Walnut, Water Based Wood Stain Base:
WARNING: Keep out of reach of children. Avoid contact with eyes. Keep container tightly closed when not in use. Wash thoroughly after handling.
- Graystone, Graphite:
Keep out of the reach of children. Do not swallow. Avoid contact with eyes. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
- Whitewash:
WARNING: Keep out of reach of children. Do not get on skin or clothing. Avoid contact with eyes. Keep container tightly closed when not in use. Wash thoroughly after handling.