

Instructions General Finishes Enduro Conversion Varnish

Step 1: Preparation

All wood projects require preparation sanding. *If you skip this critical step, your finish may fail.*

Raw wood

See our video: [How To Prep Sand New Wood](#)

1. Sand with 120-grit sandpaper followed by 150- or 220-grit.
2. Remove dust.

New Stained Surface: Do not sand. Apply directly to stained surface.

Existing Finish

See our video: [How to Prepare Existing Finishes](#)

1. Scuff clean with a Scotch-Brite™ pad or maroon synthetic steel wool & 50:50 mix of denatured alcohol & water.
2. Dry 1-2 hours.
3. Sand lightly with 220-320-grit foam sanding sponge.
4. Remove Dust

Step 2: How To Apply General Finishes Enduro Conversion Varnish

General Finishes Conversion Varnish is a clear drying, post-catalyzed, high-solids, two-component urethane formulated for ultimate durability and chemical resistance, and requires **General Finishes NCO Catalyst**. **READ PROTECTION INSTRUCTIONS IN WARNINGS SECTION BELOW BEFORE USE.**

CAUTION: Do NOT use *GF Conversion Varnish* or any other clear coat, over white or light paints such as *GF Milk Paint*, or *GF White Poly* as it may cause yellowing. Any clear coat can become reactive over wood substrates or existing finishes, causing tannin or dye bleed-through regardless of priming. All of GF's white paints do NOT require a topcoat.

Conversion Varnish Application Steps

[Watch product overview video here](#) or [comparison video of our topcoats here](#).

Stir thoroughly to reincorporate solids that have settled to the bottom of the can using a power drill and mixer (recommended) or by hand with a paint stick. See this video here: [How To Mix Conversion Varnish](#)
Slowly add up to 10% NCO Catalyst by volume (3.2 oz. per quart; 12.8 oz. per gallon) to Conversion Varnish while stirring thoroughly. Allow 2-3 minutes when mixing with a power drill, or 5 minutes when mixing by hand with a paint stick. Use gloves and protective eyewear when mixing. Mix only what you are going to use and clean spray gun immediately after use. The finish can only be mixed once, and the leftover product will solidify after 6-8 hours. DO NOT store in a closed container to avoid pressure build-up.

Thin as desired, with distilled water (before or after mixing with NCO catalyst); start with 5%, increase up to 10%. Increase open time, if needed, with up to 5% by volume of [General Finishes Extender](#) if allowed by local regulations. GF Extender can be used to 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 product non-compliant per SCAQMD Regulations. GF assumes no liability for the improper use of these products.

Let Conversion Varnish sit for 15 minutes.

Apply 3 coats. For high-moisture areas, apply 4 coats. Additional coats will not improve durability.

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](#). 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% to conceal lines. NOTE; Conversion Varnish is used with NCO catalyst. When using a spray-gun, wear self-contained breathing apparatus. In the event of insufficient ventilation: Wear self-contained breathing apparatus. When respirators are required, select NIOSH/MSHA approved equipment and work in a ventilated space. **READ ALL PROTECTION INSTRUCTIONS IN THE WARNINGS SECTION BEFORE USE.**

Face frames on cabinets: Enduro professional products are engineered to be spray-only but can be successfully applied by hand to cabinet face frames or edges with a pad applicator or small, cabinet-specific roller such as Whizz Velour brand. Larger areas may not level with a hand application.

If a faster build is desired when applying clears over raw wood, use [General Finishes Sanding Sealer](#) for the first coat, followed by 2 coats of Enduro Conversion Varnish.

Finish sand between coats with a fine-grade (220-320) foam sanding pad to improve smoothness and adhesion. Remove dust with a vacuum, compressed air, an oil-free tack cloth or a water-dampened rag.

Toning

Conversion Varnish cannot be used as a toner.

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

Dry Time

Dry Time Between Coats

Dry 2+ hours between coats in ideal conditions: 70°F 21°C; 50% humidity.

Be sure to allow adequate dry time. You can tell if a water-based finish is dry if it forms a powder when lightly sanded with a fine-grade (220-320) foam sanding pad or 400-grit sandpaper. If in doubt, wait longer. Rushing the dry time can cause "blush," which is clouding in the finish due to moisture trapped between the layers.

Increase dry time if:

Humidity is over 80%

3+ coats are applied

Thick coats are applied

Applying over an existing sealed finish

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](#) and work in a space with good ventilation and air movement. If you decide to re-coat before the recommended time, test dryness.

Cure Time Before Use

Water-based finishes cure and harden *for* full use after 21 days in ideal conditions. Avoid placing heavy objects on surfaces that have not completely cured. Treat gently, and do not clean with commercial products during the curing period.

Yellowing & Clear Topcoat

As is true of most "water-white" topcoats, General Finishes water-based topcoats dry clear over non-reactive substrates, such as plastic or metal, except [General Finishes Enduro-Var](#), which ambers. When white paint sealed with a water-white topcoat is applied to something as unpredictable as wood, all bets are off and the reason for yellowing is often unknown. It can be caused by topcoat activating tannins in raw wood or aniline dyes, stains, or contaminants in a pre-existing finish. This is most evident when using BRIGHT WHITE paint and most prevalent in sculpted details of furniture where the topcoat can collect, intensifying color change to an unacceptable level. There is no reliable way to predict whether yellowing will occur and to what degree. Every existing finish is different and we rarely know the finishing provenance on an existing piece. Every tree is different and every piece of wood is unique. Raw wood can bleed tannins immediately after the topcoat dries or months later with seasonal temperature changes. Oak, pine, mahogany, and douglas fir are particularly prone to bleed-through.

Summary

Whites have a lower "hide" quality and are more transparent than most other colors. Nearly all bright whites require additional coats to achieve the desired color and minimize color variation. This can increase the cost of paint finishing. Always include a clause in your contracts addressing the need for additional coats to achieve coverage.

All bright white paint will yellow slightly with time, with or without topcoat. You have probably tried to touch up white woodwork in your home after several years and noticed the new paint is brighter.

The underlying finish or wood species can affect the final color of light paint.

Details and inside corners are difficult to cover with any paint color, but it tends to be more noticeable with whites.

This is a naturally occurring phenomenon in paint application and does not necessarily constitute a defect in the paint finish or your technique.

The more porous the paint, such as a chalk paint, the more likely that yellowing will occur. The topcoat is seeping through the spaces caused by the larger particles of filler that give Chalk Paints their texture.

Tips to Prevent Yellowing

If it is a low-use project, use a premium white paint that is self-sealing and does not require a topcoat. A clear topcoat is not required on [General Finishes Milk Paint](#) for increased durability, as it is a self-sealing, exterior-rated coating with high durability and chemical and water resistance. However, topcoats do provide a smooth surface that is easier to clean and boosts durability for high-use projects, such as tabletops and kitchen cabinets.

Use a professional spray such as [General Finishes Enduro White Poly](#). It has "increased topcoat properties," is a standalone finish when 3 coats are applied, and does not require sealing with a topcoat.

We recommend using [General Finishes Stain Blocker](#), an engineered chemical barrier, to prevent persistent bleed-through for interior-use projects.

Stain Blocker does not adhere to melamine cabinet veneers.

Stain Blocker cannot be tinted.

Always test your project's ENTIRE finishing schedule (from cleaning to topcoat) on an inside door or a more hidden area of the piece. This will not help if the yellowing occurs later, but at least you will know if there is an immediate problem.

Avoid painting period furniture, such as a 1940s serpentine mahogany desk, with light colors. The pieces were often finished in stain that contained aniline dyes, which cast a pinkish bleed-through under light paint. Not every piece of furniture is suitable for upcycling with a light paint color. Pine, mahogany, and furniture of the 1940s and 50s are a red flag.

Last, not all manufacturers' topcoats are compatible with other finishes and may react with a color change. Always follow best practices by not rushing, and testing to your satisfaction first.

Knots

Knots in wood tend to bleed and are dense, making paint and stain adhesion a challenge. Stain Blocker may improve adhesion and prevent bleed-through for painting projects. Pine knots are especially difficult to cover with white or light paints. If you decide to paint over them, apply 3 coats of Stain Blocker first; however, we cannot guarantee adhesion or bleed-through blockage. You are better off using a dark paint on pine.

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 General Finishes Conversion Varnish

Life of Product

Water-based products do not last forever, even when unopened. General Finishes products are best used within 1 year of the manufacture date listed on the bottom of the can. The life of the product may be extended with proper care and storage.

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 Conversion, use 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.

Storage Tips

The finish can only be mixed once, and the leftover product will solidify after 6-8 hours.

DO NOT store in a closed container to avoid pressure build-up.

Store in moderate temperatures. Avoid temperatures below 50°F/10°C or above 100°F/26°C. 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. Store can upside down to create a liquid seal, minimize evaporation and reduce the chance of crystallization.

Furniture Care and Maintenance

Cure First

You have just finished applying a fine furniture finish. Treat gently until the paint or topcoat have fully cured. Allow 21 days for a water-based finish to cure and 30 days for an oil-based finish to cure before cleaning.

Regular Cleaning and Maintenance

Remove dust with a water-dampened cloth. Dust can build up over time and may scratch or dull finishes if not removed regularly.

Remove fingerprints, cooking fumes and smoking residue with mild soap and water. These contaminants will not harm the finish, but they accumulate on surfaces and dull the original luster.

As with all fine furniture finishes, avoid using furniture polish, cleaners or dusting sprays that contain silicone, alcohol, ammonia and anything acidic. Exception: We have successfully cleaned with Clorox wipes for occasional cleanups.

Clean up water, alcohol and food spills in a timely manner and use placemats & coasters to protect the finish.

Future finishes or touch-ups may not adhere properly or perform as desired over a contaminated surface. Some contaminants, such as silicone, seep through finish into the wood and often cannot be removed.

Avoid excessive exposure to direct sunlight, high temperatures or high humidity. These can damage furniture and finishes.

Warnings NCO Catalyst | Conversion Varnish | 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 manufacturers' 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.

Warning

If you scrape, sand, or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD or log onto www.epa.gov/lead.

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.

Warning

This product contains a chemical known to the State Of California to cause cancer and birth defects. Do not swallow; first aid: drink water to dilute product. May cause eye or skin irritation; first aid: flush eyes thoroughly with water.

Warning

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

PERSONAL PROTECTION DURING USE:

NOTE: Conversion Varnish is used with NCO post catalyzer. Do not breathe mist/vapours/spray. Wear protective gloves/protective clothing/eye protection/face protection. Read all protection guidelines below.

Hand protection:

Use suitable chemical-resistant protective gloves. The selection of gloves must take into account the extent and duration of use at the workstation. Protective gloves must be chosen according to the function of the work station: other chemicals which may be handled, physical protection necessary (resistance to cutting, puncture, heat), dexterity required.

Eye/face protection:

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material. Eye contact should be prevented through use of chemical safety glasses with side shields or splash-proof goggles. An emergency eyewash must be readily accessible to the work area.

Respiratory protection:

When using a spray-gun, wear self-contained breathing apparatus. In the event of insufficient ventilation: Wear self-contained breathing apparatus. When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/ or industrial recommendations.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Appropriate engineering controls:

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Hygiene measures:

Ensure good ventilation of the work station. Shower or take a bath at the end of work. Separate normal clothes from work-clothes. Immediately remove all soiled and contaminated clothing.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed. Protective clothing with elasticated cuffs and closed neck is recommended when handling NCO catalyst.

