CURING is the total reaction that continues after hardening. During this time, the properties of the A/B blend keep improving toward a maximum reached in about 1-3 weeks at room temperature, or in a few hours with heating. The changes most noticeable with the progress of curing are greater hardness, heat, and chemical resistance. The LiquidWood impregnated wood and WoodEpox masses are very easy to saw, nail, drill, plane, carve, and machine, especially in the first hours or days after the initial hardening.

New WoodEpox can be applied over hardened WoodEpox where needed because it bonds well to itself. Priming with a thin layer of LiquidWood is recommended.

COVERAGE is calculated from the fact that **1 gallon** of material is **231 cubic inches.** That is: 1 gallon will cover 16 square feet 1/10 inch thick, or 1.6 square feet 1 inch thick. This is easy to calculate for WoodEpox**.** The coverage for LiquidWood is often difficult to predict, due to the different absorption patterns in most applications.

SHELF-LIFE: LiquidWood and WoodEpox can be stored at least 1 year and almost indefinitely. Store in a warm area in containers with tight-fitting lids. To check old products, mix a small volume and observe whether it hardens properly.

LIMITED WARRANTY: The above information is based on years of accurate laboratory and field tests. As uses and applications are beyond our control, the user is urged to test the products and methods before adopting them. All warranties, including the implied warranties of merchantability and fitness for a particular purpose, are excluded. In the event of manufacturing defects in the product, purchasers' remedies are limited to the replacement of the product or the purchase price. Liability for consequential damages is expressly excluded.

WARNING: IRRITANT. LiquidWood Part A contains bisphenol-A-epoxy resin, 2,3-epoxypropyl o-tolyl ether, butyl glycidyl ether, gamma butyrolactone. LiquidWood Part B contains amidoamine. Causes skin irritation. May cause an allergic skin reaction/sensitization. Causes serious eye damage/irritation. Part A only: Suspected of causing genetic defects. Toxic to aquatic life with long-lasting effects. Avoid breathing vapor. Wear protective gloves, clothing, and eye protection. If on skin, wash with soap and water. If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing. If eye or skin irritation persists, get medical attention. WoodEpox Part A contains bisphenol-A epoxy resin, 2,3-epoxypropyl o-tolyl ether. WoodEpox Part B contains aliphatic amines, polyamide, nonyl phenol. Causes skin irritation. May cause an allergic skin reaction/sensitization. Causes serious eye irritation. Part A: contains material suspected of causing genetic defects. Part B: contains material suspected of damaging fertility or the unborn child. Toxic to aquatic life with long-lasting effects. Avoid breathing vapor. Wear protective gloves, clothing, and eye protection. If on skin, wash with plenty of soap and water. If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing. If eye or skin irritation persists, get medical attention.

ABATRON
Kenosha, WI 53144 USA
A Division of U.C Coatings, LLC
(800) 445-1754
www.abatron.com
ISO 9001 Registered

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LiquidWood® and WoodEpox® INSTRUCTIONS

LiquidWood is a thin, clear liquid designed to penetrate soft, porous wood and then harden after penetrating. Its purpose is to restore strength, stiffness, and hardness while also providing resistance to water, weather, chemicals, and rot. It consists of 2 components: **(A) Resin**, and **(B) Hardener**, packaged separately.

WoodEpox is a non-shrinking, lightweight, buff colored adhesive paste. It is designed to adhere permanently to wood and other rigid materials as a filler, substitute, or additive for missing or needed parts. It consists of 2 components: **(A) Resin**, and **(B) Hardener**, packaged separately.

LiquidWood and **WoodEpox** are entirely different in consistency, appearance, and methods of application. Furthermore, they can be used independently of each other. Yet, they are mostly used in the same types of applications as they complement each other ideally. Therefore, they are described together.

SURFACE PREPARATION: The superb adhesion of both materials is unsurpassed, but it may be impaired by improperly prepared surfaces, which must be clean and dry. Indeed, surface preparation is often the most critical step. Oils, grease, wax, soap, paint, loose matter, and soil prevent adhesion and penetration.

Old paint should be removed. It can be scraped, sanded, or stripped. Stripper residue should be removed. Oil and other contaminants can be removed with detergents, solvents, or other agents. Protect adjacent surfaces with plastic film. Moisture and water diminish penetration and adhesion. Moisture content should be below 17%. Wood can be dried with heat or ventilation. Another method to accelerate drying is brushing acetone (caution: flammable) on the wet surface. This solvent blends with water and accelerates its evaporation.

ROTTED, SPONGY WOOD can be impregnated as it is, rather than dug out, so that it becomes the framework that is stiffened and consolidated with LiquidWood. This impregnation requires dryness because moisture limits LiquidWood penetration.

COMPOSITION AND REACTIVITY: Each material is based on two components that react and harden when mixed together. Therefore, they are packaged in separate containers.

PRIMING is treating a surface with a material (primer) that promotes adhesion of a subsequent coating or other substance. Generally, a primer has the consistency of a thin coating. Wood consolidated with LiquidWood needs no primer for subsequent WoodEpox applications. If the surface is porous or difficult to wet, LiquidWood is used as the primer.

MIXING: Mix equal volumes of A and B in a container which is deeper than it is wide. Avoid shallow or overly large containers. Use separate measuring tools to scoop from the A and B containers to avoid cross contamination. Anything, from a stick to a paint stirrer, can be used for mixing. Mix only as much as can be used within the "pot life" (see page 3) period. WoodEpox can also be mixed by hand in small quantities like modeling clay. If using this method, disposable gloves should always be worn.

COMPLETE, THOROUGH MIXING IS OF FUNDAMENTAL IMPORTANCE. Incompletely mixed materials will not react sufficiently and will show as **soft spots** or **brittle areas.** The walls and bottom of the mixing container must be scraped completely and the mass mixed until there is no possible doubt of insufficiently mixed spots. This is very easy with LiquidWood, due to its very fluid nature. Mix WoodEpox thoroughly until it is a uniform color.

COLORING WoodEpox can be done best by staining or painting after hardening. Dry pigments can also be added to the A/B blend while mixing.

INDUCTION PERIOD is the time to wait, <u>after mixing A & B,</u> before applying a coating or any thin layer to prevent tackiness on the cured surface caused by atmospheric moisture or CO_2. LiquidWood generally requires an induction period of 5-10 minutes after mixing. An induction period is not needed with large and thick masses, in very dry atmosphere, or when heat is used to accelerate the hardening process.

LiquidWood can be brushed or poured. It can also be poured into holes drilled into the wood. Penetration occurs best through the end grain of the wood rather than the side grain. The drier and more porous the wood fibers, the deeper LiquidWood penetrates. Moisture, natural resins, or foreign matter will reduce penetration.

If WoodEpox is not available, sawdust, paper, burlap, cotton, or other fibers saturated with LiquidWood can be stuffed into holes or cracks to fill them. Even higher strength is obtained by alternating layers of LiquidWood and fiberglass cloth, as in the case of laminates for boats and other high strength structures. This method can build new sections, extend shapes or structural elements, and thicken and reinforce existing surfaces. Even laminations of LiquidWood and newspaper or burlap provide surprising reinforcement of thin panels in furniture or other structures.

WoodEpox is applied with a trowel, putty knife or similar tools. If shaping by hand is preferred, gloves (plastic or rubber) are used for skin protection. Tip: dipping the putty knife in isopropyl alcohol will aid in smoothing WoodEpox and reduce sanding.

The shaped WoodEpox putty bonds permanently to wood, ceramics, concrete, metal, glass, fiberglass, and most rigid materials. For best adhesion, the surface should be coarse sanded or roughened before application. When applying WoodEpox over LiquidWood, the best time to apply it is when the LiquidWood is tacky, usually within 1 to 2 hours, and not completely hardened.

WoodEpox is ideal for troweling or shaping missing parts in window frames and sills, furniture, columns, steps, doors, sculptures, or to fill holes and other cavities of any size. Nails, wires, rods, or other reinforcements can be inserted and embedded for strength.

THIN WoodEpox by blending it with LiquidWood. Blend pre-mixed LiquidWood into pre-mixed WoodEpox and thoroughly stir the two products until a uniform consistency is reached. This can be done in any ratio. This method can be used for filling small checks and cracks. Sand excess after hardening. Thin LiquidWood with **ABOSOLV**™, up to 10% by volume, to obtain maximum wetting and penetration in critical areas.

CLEAN tools with ABOSOLV, acetone, or isopropyl alcohol before the material hardens. Discard used brushes.

HARDENING results from mixing A (Resin) and B (Hardener). **POT LIFE** is the time the A/B blend remains liquid or workable in the mixing container, just before hardening. This is measured on about one pint of mix. At 75ºF the pot life is about 30 minutes for LiquidWood and 20 minutes for WoodEpox**.** The reaction generates heat, and the heat accelerates the reaction. This is evident especially in larger masses: the larger the bulk, the more reaction heat it retains. This in turn accelerates the reaction, in the pattern of a chain reaction. Therefore: **the larger the mass, the faster the reaction.**

Thin layers or coatings harden in a time that may be up to ten times as long as the pot life because the reaction heat is absorbed by the substratum and atmosphere before it can accelerate the reaction. The hardening of LiquidWood is slowed also by the penetration into the fibers and pores which absorb the reaction heat. This gives the resin plenty of time to penetrate before hardening.

HEAT accelerates hardening; cold retards it. LiquidWood or WoodEpox can harden in 1-3 hours at room temperature, or in a few minutes with heating. At very low temperatures, the reaction can slow down to almost a halt. The practical application temperatures are above 50°F. The preferred temperature range is 60-90°F.

PAINTING: Wait at least 24 hours after hardening, and sand lightly before painting. Use any good quality oil or latex paint.