



## HOW-TO BOOKLET #3033

# STOP WOOD ROT AND INSECT WOOD DAMAGE



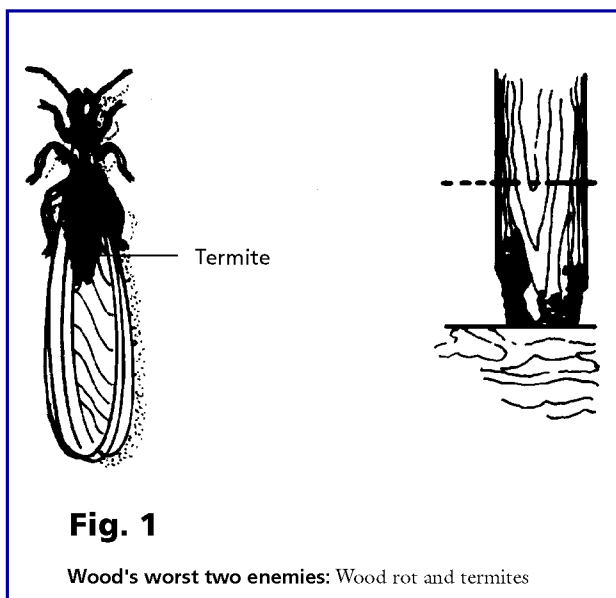
### TOOL & MATERIAL CHECKLIST

- Wood Preservative (EPA Registered)
- Goggles
- Exterior Paint
- Exterior Wood Stain
- Deck Brightener
- Mildew Protector
- Primer
- Protective Respirator
- Waterproofing sealer
- Paint Brushes or Pads
- Spray Gun
- Exterior Wood Stains

*Read This Entire How-To Booklet For Specific Tools and Materials Not Listed in The Basics Listed Above.*

The need to prevent wood from deteriorating is very important to all homeowners. Rot, mold, mildew, and algae are natural biological hazards that affect most types of woods. Insects such as termites, carpenter ants, and powderpost beetles may also cause significant structural problems. Insects may cause direct structural damage or increase the susceptibility of wood to fungal or biological decay.

Wood in exterior use must also be waterproofed. Though wood can be protected against biological damage and insects, water can still penetrate the fibers and cause the wood to swell and warp. The sun and wind also combine to dry wood and make it crack or split. Although wood is structurally strong, it needs your help to keep it that way.



**Fig. 1**

Wood's worst two enemies: Wood rot and termites

## WOOD PRESERVATIVES

Redwood, cedar and cypress are considered to be resistant to most biological and insect attacks. The Environmental Protection Agency (EPA) has placed wood preservative pesticides in a restricted use classification. This means that this liquid wood preservative can only be sold to and used by certified applicators. Virtually all uses of the three major industrially applied wood preservative solutions – pentachlorophenol (used primarily in utility poles), creosote (railroad crossties) and CCA – are classified for restricted use. Although CCA pressure-treated wood is processed with a preservative, the treated wood is not a “Pesticide” or “Preservative” as a finished product, and is safe for use around people, pets and plants (see Booklet # 3082).

EPA-registered wood preservatives, unlike those in the restricted classification, are available at hardware stores, lumber yards, and home centers. They protect wood siding, decks and fences from all common decay-causing fungi and mildew. Some have good water repellency to protect wood against warping and cracking and, in addition may contain transparent oxides that block out the sun’s UV rays. They don’t offer great protection against wood attacking insects; only pressure treated lumber and naturally resistant wood do.

Apply the preservative by sprayer, (backbrush with the grain) brush, pad, roller, or dip (at least 10 minutes). Pay special attention to areas where cuts have been made. Apply when outside temperatures are between 40 and 90 degrees F and when 24 hours of precipitation-free weather is expected. Don’t apply over paint or stain or use it as a primer coat.

All liquid wood preservatives are toxic to fish, domestic animals and wildlife. Don’t apply directly to any body of water. Care should be taken to prevent drops or spray from contacting living ornamental shrubs, trees, grass and other desirable vegetation. Vapors may cause injury if adequate ventilation isn’t insured. Never use a liquid wood preservative indoors, or any other

confined areas, where the vapors may concentrate or migrate indoors and cause injury to plant or animal life. Avoid contact with eyes, skin or clothing. Use goggles and protective clothing (rubber gloves) when dipping, and an approved respirator when spraying is recommended. To get rid of leftover preservative and container, follow directions given on the container.

Fig. 2

EPA Reg. No. 264-334-8845  
 EPA Est. No. 9688-MO-1 ©  
 769-GA-1 ©  
 Form: BKL/A1 © 1991

The EPA registration number

## WOOD WATERPROOFING SEALERS

All wood needs protection from water. Even though pressure-treated wood is protected from rot and termites, it can be very vulnerable to water damage. Rain, melting snow and other moisture penetrates the wood fibers and the wood expands and warps. Then, as the moisture evaporates, the wood dries out, contracts and often develops long splits and cracks, commonly seen on pressure-treated wood decks that haven’t been waterproofed. This cycle can repeat itself until the wood is extensively damaged. That’s why those who make pressure-treated lumber generally recommend waterproofing it for more complete protection.

For decks, one coat of water repellent is usually recommended (one gallon of most repellents will cover 150 to 200 square feet). Two coats of repellent are suggested for siding. While water repellent coatings protect wood against the warping, splintering and cracking that is caused by water absorption, it doesn’t prevent wood graying and other problems caused by sunlight. Therefore, select a waterproofing material that offers U.V. resistance. Many are available in a formula compliant with V.O.C. (volatile organic compounds) air quality regulations.

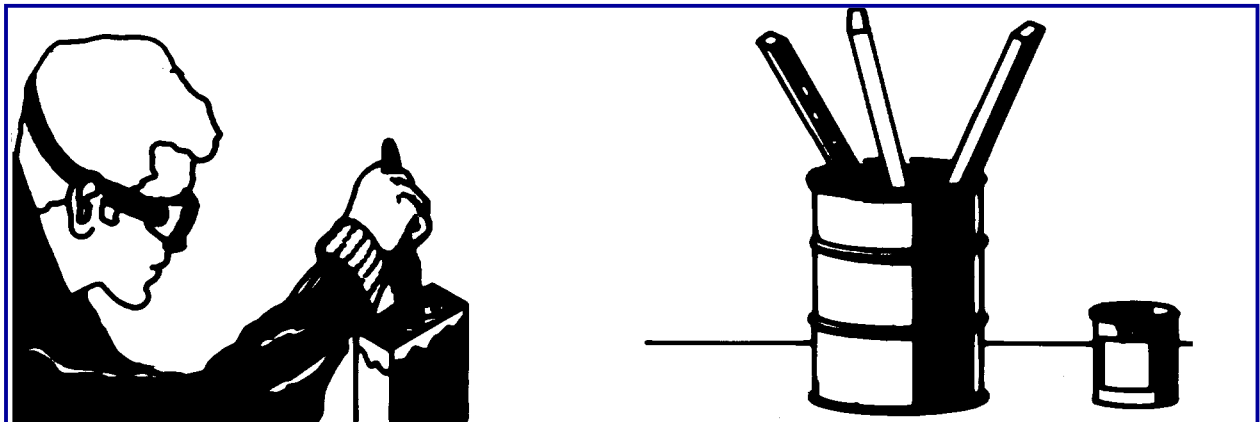


Fig. 3

Two methods of applying wood preservatives: Brushing and dipping

Most water repellents are generally clear liquids and may be used as primers on woods. Usually, repellents are formulated with silicone, so any surface covered with a repellent can't be painted until the silicone has worn off of the surface to which it was applied. Some sealers contain a so-called "blender" which highlights the wood grain with sheer, natural wood tones.

## EXTERIOR PAINT

Although they are not always thought of as such, paints and stains are the most widely used wood preservatives. Above ground they offer adequate protection that lasts from about 5 to as long as 12 to 15 years, depending upon the surface and the weather conditions in your area.

It's important to remember that most failures of paint to protect wood can be traced to surface failure (the substratum) rather than the paint. Paint seldom, if ever "fails."

As with any painting job, more than 90% of the work involved should be with preparation of the surface. For paint to adhere properly, it must be applied to a clean and dry surface free of dirt, dust, grease, and flaking paint or other types of paint trouble. The time that you invest in cleaning, scraping, and patching will make it all worthwhile. Applying the paint is the easiest part of the painting project.

While oil-based paints are still available as wood covering, the most common types used today are latex (water-thinned) and alkyd (solvent-thinned).

**Latex Finish Paint.** This wood protective finish is available at home centers, hardware and paint stores in a wide range of pre-mixed colors. It may be applied with a brush, roller, pad painter, and spray gun. It may also be applied in hot sunshine, when the weather is cool, and even when the surface to be painted is slightly damp.

It is almost odorless, thinned with water, and fade-, fume-, and mildew-resistant. Since it's water-based, tool clean-up can be under the kitchen sink faucet.

Latex paint dries quickly, has excellent color retention, and resists peeling and blistering. Acrylic, a type of latex paint, dries especially quickly.

**Alkyd Finish Paint.** Alkyd paints feature a synthetic resin base that has replaced the oil base used in older formulas. You'll need solvents for cleanup. Alkyd takes longer to dry than latex, but forms an exceptionally durable surface. You must apply alkyd paint to an absolutely dry surface. Because of its excellent hiding power, alkyd works well on woods such as cedar and redwood, which tend to bleed.

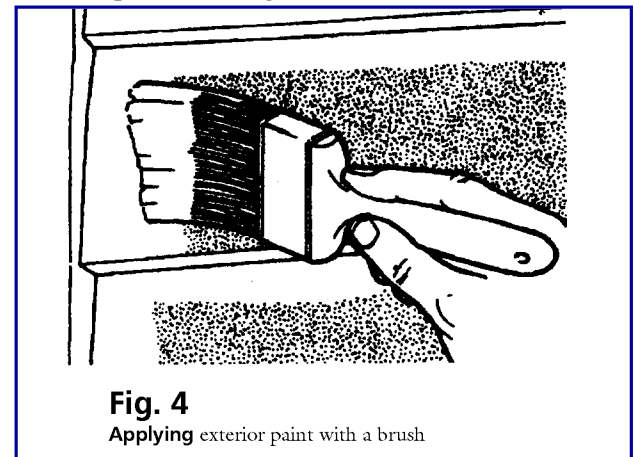
If you'll be painting a surface for the first time, select the type of coating that seems most appropriate. (Remember latex shouldn't be used on bare wood; a primer coat is usually needed.) With previously painted surfaces, however, you'll usually be better off to continue with the same type of coating. Old latex beneath a new coat of alkyd lets moisture pass through, causing the alkyd to peel. Latex may not adhere properly over a chalking alkyd surface. Contrary to popular belief latex may be applied over exterior oil paint IF the oil paint is tightly bonded to the surface and deglossed.

Primers are often overlooked or considered a waste of money. Why not just thin the finish paint and use it as a primer? Primers are very important—especially to bare wood—since they are formulated to seal the surface and give it "tooth" to accept finish coats of paint. If a finish paint is thinned and used as a primer, the necessary pigment is missing since it has been thinned.

## MILDEW PROTECTION

If you live in an area where mildew on wood surfaces is a problem, use a paint that is formulated with a mildewcide. To clean away mildew, use one quart of household bleach, one-third cup of standard laundry detergent (powder), and two-thirds cup of any cleaner containing trisodium phosphate all mixed in three quarts of warm water. Plan to use lots of "elbow grease" and have lots of patience.

If you don't wish to use elbow grease, there are several products at your paint supplier that clean without scrubbing and also prevent mildew regrowth. Mix the material as directed on the container and use a tank-type garden sprayer, preferably with a nozzle that provides a fan spray. Spray liberally on affected areas. Bleaching will occur within minutes, but may not be immediate. For best results, wait 15 to 20 minutes, then rinse well with a garden hose at maximum nozzle pressure. Use lots of water for a thorough rinse. For very heavy mildew stains, you may need to re-apply and rinse again. Textured surfaces such as rough sawn cedar may need to be scrubbed lightly for complete cleaning.



**Fig. 4**  
Applying exterior paint with a brush

## EXTERIOR WOOD STAINS

Instead of hiding wood beneath an opaque coating the way paint does, stains let wood's natural grain show through. Like paints, stains are available in latex and alkyd varieties. Latex stains retain their colors well and work best on surfaces that are resistant to water. If the surface is too porous, latex's water base can raise the wood's grain and mar a smooth finish. Alkyds penetrate wood to prevent cracking, and are best suited for use on porous woods.

Stain is excellent for outdoor furniture, fences, plywood and board siding, decks, and deck railing. It's the best protecting agent to use on roof and siding shingles and shakes. Paint which has a pigment, will hold water and cause the shingles to rot faster than without any preservative at all. Paint also will peel from the moisture (rain, snow, sleet, etc.).

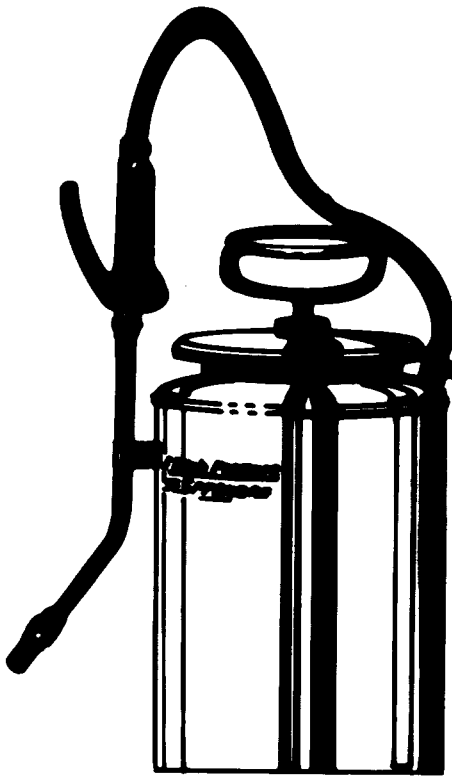
Stains vary in their degree of coverage. Totally clear coatings are available, but are not recommended because the sun's ultraviolet rays deteriorate them. If you want to protect wood but retain a natural appearance, use a wood preservative, as described earlier, which helps resist moisture, decay, fungus, checking and warping. Application of stains is by a brush, pad painter, or roller. Check the container label to see if the manufacturer recommends spraying. Some stains don't spray well.

There are three basic types of exterior wood stains available at home centers, paint stores and hardware stores. They are:

**Semitransparent stains** (sometimes called penetrating stains) alter the wood's natural color without obscuring its grain.

**Solid-color stains** (sometimes called opaque stains) provide greater coverage, although some of the wood grain remains visible. This type of stain works well on lower grades of plywood or on blemished surfaces.

Fig. 5



Applying mildew protection with a garden sprayer

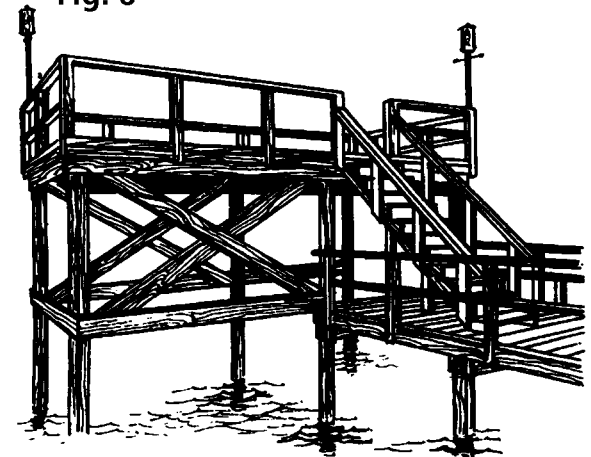
**Bleaching or weathering stains** turn wood a silver-gray color without waiting for nature to weather the raw wood.

**Deck Stains.** No exterior wood surface gets more use and abuse than a deck. Moisture from rain, sprinklers and dew combined with hot sun and foot traffic are the enemies of ordinary stains on

horizontal surfaces. That's why many stain manufacturers produce special deck stains. Most of these stain formulas provide protection against unsightly scuffing, as well as additives that repel water and resist mildew on the stain film. Most deck stains are oil-based, semi-transparent finish. They may be applied by brush, paint pad, roller or sprayer. Clean the equipment with mineral spirits or paint thinner.

**Deck Brighteners.** Unless your deck is brand new, there are mildew stains and ground-in dirt that keep it from looking its best. The use of deck brighteners is usually a quick and easy way to remove the grime and restore the bright look to the wood. The concentrated brightener powder mixes with water to make a thick foam that clings to deck surfaces. And it won't harm grass and most plants. In fact, some deck brighteners are biodegradable and contain non acid or chlorine bleach. Follow the directions on the container when applying any wood protectant.

Fig. 6



Properly treated, wood decking will last for years.