



## **Guidelines for Finishing and Use of Adhesives with Fire-Retardant and CCA-Treated Wood**

Hoover's [Pyro-Guard](#) and CCA-treated wood can be finished or glued with good results. Precautions and procedures for finishing or gluing these treated wood products are similar to those for untreated wood.

As with untreated wood, finish and adhesive performance is highly dependent on moisture content, species, surface preparation, application method, and finishing system. For [Exterior Fire-X](#) exterior fire-retardant treated wood, see "[Guidelines for Finishing Exterior Fire-X](#)."

### **▲Moisture Content**

Moisture content of the wood is a critical factor in determining the effectiveness of wood finishes and adhesives, whether treated or untreated, but all too often moisture content is overlooked in the rush to complete a construction project.

If moisture content is too high, poor finish or adhesive performance is likely. Moreover, the dark water-soluble extractives in some species such as western red cedar can discolor finishes, particularly if the wood is not dry when finished.

Exterior treated wood should only be finished or glued after a period of warm, dry weather when wood moisture content is uniformly low. It is counterproductive to wait an arbitrary period such as six months or a year before finishing exterior treated wood.

This does not guarantee dryness, and it allows buildup of mildew, soot and other surface contaminants. Interior treated wood should only be finished or glued after HVAC equipment is working and moisture content of the wood has stabilized.

Even though Pyro-Guard and CCA KDAT (Kiln Dried After Treatment) lumber and plywood are always kiln dried after treatment, additional drying time is necessary after installation because of possible re-wetting on the job or moisture gain due to high humidity.

Furthermore, even freshly KDAT wood will not have a uniformly low enough moisture content for finishing. For example, untreated plywood is manufactured at 6-8% m.c. compared to treated plywood that's KDAT to 15%. This is why additional on-site drying is necessary, and it's also the reason why application of finish or adhesive to freshly unbundled KDAT treated wood is not recommended.

### **▲Species**

Of the softwoods, western red cedar and redwood are rated easiest to finish, whereas

southern yellow pine and Douglas fir are rated difficult to finish. Western red cedar and Douglas fir contain natural, dark extractives that sometimes bleed through finishes.

Cedar and redwood have narrow bands of latewood, while southern yellow pine and Douglas fir are denser with wide bands of latewood and are more subject to dimensional change and poor paint adhesion.

### ▲**Paint or Stain?**

According to the U.S. Forest Products Laboratory (FPL), wood shrinkage and swelling due to fluctuating moisture content constantly stresses a paint film and will cause cracking and peeling. Consequently, for exterior wood, penetrating stains are likely to perform better because they cannot crack and peel off.

FPL studies show that all-acrylic latex solid-color stains are generally superior to oil-based stains on exterior wood when two coats are applied. Stain-blocking primers are recommended as the first coat.

Brush application is more effective than spray or roller application. Primer and finish coat should be from the same manufacturer to assure compatibility, and to assure accountability if there is a problem.

If paint is used, FPL testing shows that two coats of all-acrylic top-coat paint applied over a stain-blocking acrylic latex primer lasts longer than other paint systems for exterior wood.

Oil-based paint films usually provide the best moisture shield, but they are not the most durable because they tend to become brittle and are more likely to crack and peel.

### ▲**Water Repellent Preservative Coatings for CCA-Treated Wood**

Water repellent preservative coatings are recommended for exterior wood that is not stained or painted because they reduce moisture absorption, shrinkage and cracking. They also help prevent mold and mildew.

Be sure to buy a product that has a preservative ingredient in addition to the water repellent ingredient to help control mold and mildew. Coatings should be re-applied every year or two.

### ▲**Surface Preparation**

Surface preparation is extremely important. In addition to being thoroughly dry, the surface must be free of dirt, surface deposits, pitch, dust, mildew and other materials. Sanding, cleaning, scraping, brushing or wiping may be necessary to clean the surface.

Avoid washing or pressure washing because it re-wets the wood.

Shop pre-finishing is not recommended unless the wood can be thoroughly dried before finishing.

### **▲Effect Of Finishes On Flame Spread Rating Of Pyro-Guard**

Pyro-Guard has a flame spread rating well under the Class A requirement of 25 and a finish coat is not likely to increase the flame spread rating above 25, nor is it likely to affect the fire-retardant chemicals in the wood. The UL Classification label on Pyro-Guard does not certify flame spread after finishing. Consult finish manufacturer for flame spread rating of the finish.

### **▲Testing Of Finishes**

Due to the infinite variety of weather conditions, building exposures, storage conditions and construction techniques, Hoover Treated Wood Products Inc. cannot make detailed recommendations for finishing its products. Hoover Treated Wood Products Inc. accepts no liability with regards to the finishing of its products.

IT IS THE USER'S RESPONSIBILITY TO TEST THE DESIRED FINISHING SYSTEM ON SAMPLE MATERIAL AND EXPOSE TO ACTUAL USE CONDITIONS TO DETERMINE IF THE DESIRED EFFECT CAN BE OBTAINED.

### **▲References And Recommended Reading**

"Exterior Wood In The South - Selection, Application And Finishes" by Daniel Cassens & William Fiest. Published by USDA Forest Service, Report No. FPL-GTR-69, One Gifford Pinchot Drive, Madison, WI 53705. Also available from Southern Pine Marketing Council, P.O. Box 52468, New Orleans, LA (504) 433-4464; and the Southeastern Lumber Manufacturers' Association, P.O. Box 1788, Forest Park, GA 30051. Phone: 404.361.1445.

"Finishing Exterior Wood Products" by the American Forest and Paper Association, 1250 Connecticut Avenue NW, Washington, DC 20036. Phone: 202.463.2700.

"Wood Engineering Handbook" by the U.S. Forest Products Laboratory, Published by Prentice-Hall Business and Professional Division, Englewood Cliffs, NJ 07632. FINI0596.