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MAINTENANCE AND RECOATING

OF HARDWOOD FLOORS

2nd Edition

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NO GUARANTEE OR WARRANTY

The information contained in this publication represents widely accepted industry practices. There are, however, no universally approved methods of maintenance and recoating. The National Wood Flooring Association accepts no risk or liability for application of the information contained in this publication.

MAINTENANCE AND RECOATING

OF HARDWOOD FLOORS

Importance of Maintenance

Unlike most floor coverings, wood floors are a long-term investment that, correctly maintained, will last the lifetime of the home. Fortunately for consumers, today's wood floors offer a wide spectrum of product options that are easy to maintain. Unlike times past, when people had to get down on their knees to buff their wax floors, taking care of wood floors today requires little effort. The routine maintenance involves protecting the finish from scratches and moisture. If consumers avoid both of those things, they've got a handle on most of their wood floor care.

EDUCATION OF THE CONSUMER

Creating realistic expectations of wood floor maintenance up front—before the contract is even signed—is important. Consumers who

realize that their floors aren't impervious to an onslaught of spills, grit and water will be happier with their floors and less likely to call back with complaints in the future. Be sure to:

- Explain proper maintenance—both preventive, such as using throw rugs and floor protectors, and routine, such as using the correct wood floor cleaner. (Many contractors include the cost of the cleaner in their job estimates or offer it as the floor is being completed.)
- Make customers aware that using improper cleaners can void their warranty and also cause future problems with recoating.
- Explain recoat schedules. Depending on the traffic on the floor, most floors will need recoating at some point. Tell them to call a wood flooring professional when they think the floor might need recoating. If the floor performs as you've said it will, the customer will feel confident calling you when it's time for a recoat.

- Explain how humidity levels affect wood floor performance. This also helps avoid complaints about gaps between boards.

In addition to a verbal explanation, give this information to the customer in writing. (For more on moisture and wood floors, see Technical Manual Chapter A100: Water and Wood.)



When maintained properly, wood floor finishes can look beautiful for years to come.

All Floors

While specific finish types may require different maintenance, some guidelines apply to the care of all wood floors:

- Floor protector pads should be installed on the bottom of all furniture legs before furniture is placed onto the wood floor.
- Place rugs at all entrances. They help trap grit and absorb moisture before either one has a chance to damage the finish. (Check with the finish manufacturer for when these can be placed—usually they should not go down on the floor for at least seven days, and sometimes more than 21 days after the finish is applied.)
- Rugs should be shaken out, cleaned and thoroughly dried when they get wet.
- Take special precautions with non-skid pads that are frequently placed under area rugs. These pads may imprint their pattern onto the finish and/or wood floor. (Natural fibers may not transfer as much as synthetic pads.)
- Be aware that area rugs often cause color differences in the floor due to differences in light exposure.
- Expect that floors will shrink and expand with changes in humidity, sometimes leaving small gaps between boards. To minimize changes, humidity control in the home is recommended.
- Routine basic maintenance includes sweeping, vacuuming and/or dust-mopping to remove dirt and grit. (Use only vacuums that have a hard-surface setting.) The more that dirt and grit are allowed to accumulate, the more they will be tracked over the floor, leaving scratches. Floors should be cleaned immediately before and after a major event.
- Some manufacturers recommend lightly damp-mopping a floor, while others do not.
- Household dust treatments should never be used.
- All shoes, especially high heels, should be kept

in good repair—if they lose their protective cap, they will dent the surface of *any* floor.

- Pet nails need to be trimmed regularly.
- Be especially attentive to potential spill areas, such as dishwashers, sinks, icemakers and stovetops. Other potential problem spots include household plants and Christmas tree stands.

Those are some of the basics. For information specific to finish types, read the following sections.

WHAT TO USE?

It is important to impress upon consumers exactly which directions to follow and which products to use in caring for their wood floors. Although Mr. Smith may use cleaning product X, his floor may have a different finish from Mrs. Brown's finish next door.

- For factory-finished wood floors, consumers should follow the directions of the flooring manufacturer as to which cleaning products to use. This is extremely important because not following those directions may void the manufacturer's warranty of the wood floor.
- Consumers with floors that were finished at the job site should follow the maintenance directions of the floor finish manufacturer.
- Using a non-recommended product to clean the floor may ruin the appearance of the finish, and it also may cause problems down the road when it is time for the floor to be recoated.
- If the manufacturer of the wood flooring or finish is unknown, the customer should follow the general guidelines detailed on the next page.



DO use floor protectors



DON'T use wet mops



DO vacuum often

SURFACE FINISHES

Maintenance tips specific to surface-type finishes (water-based urethane, oil-modified polyurethane, conversion varnish, moisture-cured urethane and the finishes on most factory-finished floors) include:

- As with any wood floor, follow a program of sweeping and vacuuming to eliminate as much dirt and grit as possible, and remember that moisture should not come in contact with the floor. If it does, it should be wiped up immediately.
- Always use the manufacturer's recommended cleaning products, which won't leave a contaminating residue on the floor. If the manufacturer of the wood floor or the finish is not known, use a generic hardwood floor cleaner available from a local wood flooring professional.
- Most warranties from finish manufacturers and factory-finished wood flooring manufacturers are voided by the use of oil soap cleaners.
- Wipe up spills immediately with a lightly dampened cloth, then use a recommended cleaning product.
- For stubborn stains, lightly dampen a soft cloth with a recommended hardwood floor cleaning product. Apply directly to the stain and repeat as necessary.
- Never use a wax finish on top of a surface finish.
- Using steam or excessive water may damage a wood floor.
- When the floor loses its luster, there are options to revive the floor. A professional topcoat dressing may revive the floor's appearance. However, that is not a substitute for a recoat using a chemical or mechanical recoating system.

SPECIALTY FINISHES

Wax Finishes

Maintenance tips specific to wax-type finishes include:

- As with any wood floor, follow a program of sweeping and vacuuming.
- Wipe up spills immediately with a dry cloth. Buffing may be required.
- To remove white spots caused by water spills, use a fine steel wool, a soft cloth or synthetic pad and a small amount of mineral spirits. Rub gently in a circular motion until the spot is gone. Then re wax the area and re buff.
- When the floor loses its luster in heavy traffic areas, buff those areas with a polishing brush or pad. If that does not restore luster, re wax only those areas and buff. Note that too much wax causes the floor to scuff easily.
- Eventually the floor will need to be stripped and re waxed. Even if waxed floors are completely sanded down, they may be very difficult to coat over with a surface finish.
- Use only a professional carnauba-based wax designed for wood floors.

Oil Finishes

Maintenance tips for oil-type finishes include:

- As with any wood floor, follow a program of sweeping and vacuuming.
- Wipe up spills immediately with a dry cloth.
- The oil finish will need to be periodically reapplied by a professional. There are many types of oil finishes (see glossary); follow the directions for that specific product.

Non-Urethane-Coated Acrylic Impregnated Floors

The care of non-urethane-coated acrylic impregnated floors differs significantly from most other floor finishes:



DO use throw rugs



DON'T use ammonia



DON'T use dust cleaner

- Use a low-speed buffing machine with the appropriate pad and recommended cleaning product as necessary. Depending on the manufacturer, different pads may be recommended for different steps in the cleaning process.
- Use recommended dust mop treatments to enhance dust mopping.
- For white/bleached products, always use an untreated mop—never use water or petroleum-based products. The floor should be buffed with a low-speed buffer and a recommended product specifically for white/bleached floors. (More maintenance will be required of white/bleached floors than other colors.)
- Some manufacturers recommend that floors that have become dull be lightly screened. Then, a recommended cleaner and recommended conditioning product should be used.
- Follow the manufacturer's directions for spot-cleaning stubborn stains. Methods include spot sanding or screening and then applying the recommended cleaner and conditioner. Other methods include using mineral spirits or hydrogen peroxide and a hand-sized piece of synthetic pad to remove the stain.
- Note that recoating such floors with urethane will void the manufacturer's warranty.

SPORTS FLOORS

Sports floors, from basketball courts to aerobics studios, usually take a beating of heavy daily use. Specific recommendations for sports floors are available from the Maple Flooring Manufacturers Association:

111 Deer Lake Road, Suite 100
 Deerfield, IL 60015
 phone: 847/480-9138
 fax: 847/480-9282
 mfma@maplefloor.org
 www.maplefloor.org

General guidelines include the following:

- DO dry mop the floor daily with a properly treated dust mop. Floors with especially heavy use should be swept up to three times a day.
- DO use walk-off mats at all doorways.
- DO wipe up spills or any other moisture on the floor immediately.
- DO remove heel marks using a floor finish manufacturer's approved wood floor cleaner applied with a soft cloth or a dust mop.
- DO make sure the heating/ventilating/air conditioning system (HVAC) is working properly, with normal humidity levels. Indoor relative humidity should be between 35 and 50 percent year-round. In areas of consistently high or low outside humidity, a 15 percent fluctuation will not adversely affect the maple.
- DO inspect the floor for abnormal tightening or shrinkage. In wet weather, carefully monitor doors and windows for water leakage.
- DO remove debris from expansion voids.
- DO NOT shut down the HVAC system for a prolonged period of time.
- DO NOT use household cleaning products, which damage the floor finish and also may leave the floor slippery or sticky.
- DO NOT clean the floor with scrubbing machinery or power scrubbers.



DO use walk-off mats



DON'T track in dirt



DO use dust mops

RECOATING

Many contractors remind customers with a postcard or e-mail when their floors may be due for a recoat. When bidding recoats, be clear on the customers' expectations—a floor that is simply recoated won't look the same as a floor that has been totally resanded.

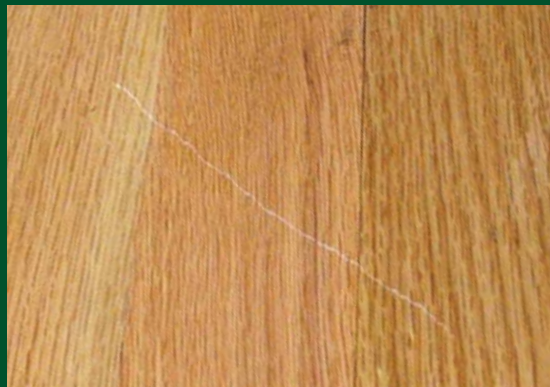
Keep the following in mind when recoating:

- **Be aware of any government regulations. Disturbing an area of more than 6 square feet in any housing or child-occupied facility built before 1978 requires lead abatement certification; go to www.epa.gov for more information.**
- Before attempting a recoat, inspect the floor for wear to determine what steps will be necessary. If the finish is worn to the point that the color of the wood is not uniform or that bare wood is exposed, complete resanding and finishing is necessary. If the wear is not that severe, the floor can be mechanically abraded and recoated, or a chemical recoating system may be used.
- Ask the homeowner what has been used on the floor, and find out as much about maintenance habits as possible.
- Determine the type of finish that is already on the floor. To check for varnish or shellac, scratch the surface in an inconspicuous place with a coin or other sharp object. If the finish flakes, it is probably shellac or varnish; these finishes will need to be resanded.

To check for wax, there are several methods (test the floor in an inconspicuous place):

- Use a small amount of mineral spirits on a clean, white rag in an area that has not been exposed to high traffic. If a slight yellow or brown color appears on the rag, then wax is probably present.
- Use a piece of screen or sandpaper to lightly abrade the floor. If residue balls up, it is a wax-based product.
- Put two drops of water on the floor. If white spots appear after about 10 minutes, the finish is probably wax (the white spots can be removed by gently rubbing them with a soft cloth or synthetic pad dampened with wax).
- If wax, shellac or varnish are not present on the floor, most likely the finish can be coated over with a regular surface finish.
- If it is a wax finish, it may be very difficult to recoat the floor with a surface-type finish (i.e. oil-modified, waterborne, conversion varnish, moisture-cure), even with resanding.
- Before recoating, the floor should be cleaned with a non-residue cleaner designed specifically for hardwood floors.
- If mechanically abrading the floor, use

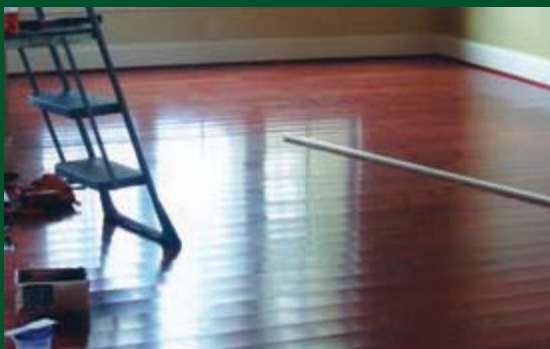
SOME FLOORS CAN'T SIMPLY BE RECOATED ...



Deep scratches that go through the finish.



Dents (these usually require board replacement).



Cupped floors.

SOME FLOORS CAN'T SIMPLY BE RECOATED ...



Changes in color due to differences in light exposure, such as under an area rug.



Water or pet stains (pet stains may not come out even after total resanding).



Dirty floors with finish totally worn off.

the abrasive recommended by the finish manufacturer (typically a sanding screen, pad or sandpaper). After abrading, vacuum all dust possible and tack the floor (follow the finish manufacturer's directions for tacking).

- Factory-finished wood floors can be recoated, usually with the same procedures that are used for site-finished flooring. Recoating is recommended to restore the finish when it shows wear but is not totally worn through. Sanding and refinishing is necessary only when there is severe damage, such as finish completely worn through, to a large area. Severe damage to just a few boards can be repaired by replacing only those boards.
- Be aware that recoating a factory-finished floor may void the floor's warranty.
- Spot finish touchups are possible but may not offer the same appearance as a total recoat. Many finish manufacturers offer a consumer-oriented product for minor spot finish and stain repairs. Depending on the extent of the repair, however, recoating or resanding the entire floor may be necessary.
- Resanding, abrading and/or recoating of a wood floor is a job best performed by a wood flooring professional. (For more on sanding, see Technical Manual Chapter B200: Sanding and Finishing.)

WHICH PUTS GREATER FORCE ON A FLOOR?



An elephant has a force of 50 to 100 pounds per square inch (psi) on a floor, while a 125-pound woman in high heels has the force of 2,000 psi. That's 20 times greater than the elephant. Such force can damage any floor, not just hardwood. Exposed nailheads are especially brutal to a floor—their 8,000 psi is damaging enough to pulverize hardened concrete.

GLOSSARY

Abrasion Resistance That property of a surface that resists being worn away by a rubbing or friction process. Abrasion resistance isn't necessarily related to hardness, as believed by some, but is more closely comparable to, or can be correlated with, toughness.

Adhesion The property that causes one material to stick to another. Adhesion is affected by the condition of the surface to be coated and by the closeness of contact.

Bond The adhesion between two dissimilar materials.

Conversion Varnish A solvent-based floor finish that is pre-catalyzed (one-component) or post-catalyzed (two-component). (Sometimes referred to as "Swedish finish" or "acid-cure.")

Cure To change the properties of an adhesive or coating by chemical reaction and thereby develop maximum strength.

Drying The act of changing from a liquid film to a solid film by the evaporation of solvents, oxidation, polymerization or by a combination of these phenomena.

Dry Tack-Free The stage of solidification of a film of finishing material when it doesn't feel sticky or tacky when a finger is drawn lightly across it in a quick, continuous motion.

Durability The ability of a finishing material to withstand the conditions or destructive agents with which it comes in contact in actual usage, without an appreciable change in appearance or other important properties.

Fading The loss of color due to exposure to light, heat or other destructive agents.

Gloss The luster, shininess or reflecting ability of a surface.

Hardness That property of a dried film of finishing material that causes it to withstand denting or being marked when pressure is exerted on its surface by an outside object or force.

HVAC Heating, ventilating and air conditioning.

Moisture-Cure Urethane A solvent-based polyurethane that dries by solvent evaporation and cures by a reaction of the polyurethane with atmospheric moisture.

Oil Finish, Hard Wax Oils (natural vegetable-based) with wax. The wax is normally "natural-based wax," i.e., carnauba wax.

Oil Finish, Hybrid A wide range of oil finishes typically based on vegetable oil that is often combined with alkyd resins for better drying and durability.

Oil Finish, Natural-Based The main ingredient in these finishes is the binder, which is a natural-based oil (e.g. sunflower oil, safflower oil, soja oil). These oils have a small amount of non-natural dryers so they will dry. Tung oils are included in this group.

Oil-Modified Urethane A solvent-based polyurethane that dries by solvent evaporation and cures by a reaction of the polyurethane with driers and air.

Peeling A defect in a dried film manifested by large pieces becoming detached from the under surface and coming loose in sheets or large flakes.

Scratches Slight incisions, breaks, tears or indentations on the surface caused by abrasive friction.

Sheen The degree of luster of the dried film of a finishing material. It is usually used to describe the luster of rubbed surfaces or of flat-drying materials.

Solvent A liquid that can dissolve another substance.

Staining The act of changing the color of wood without disturbing the texture or markings, through the application of transparent or semitransparent liquids made from dyes, finely divided pigments or chemicals.

Urethane A synthetic chemical structure formed by one of three specific chemical reactions.

UV-Cured Coating A type of coating that is cured by subjecting it to a specific dosage of ultraviolet light.

Water-Based Urethane A waterborne urethane that is fully cured and dries by water evaporation.

Wax Any of a number of resinous, pliable substances of plant or animal origin that are insoluble in water, partially soluble in alcohol, ether, etc., and miscible in all proportions with oils. It is used for making polishes and other products.

Wet-Mop Mopping a floor using a mop dripping with water. Hardwood floors should *never* be wet-mopped.

Yellowing The tendency of a dried film to take on a yellowish cast with age.

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SOURCES AND CREDITS

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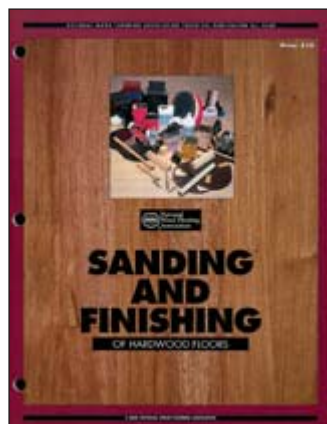
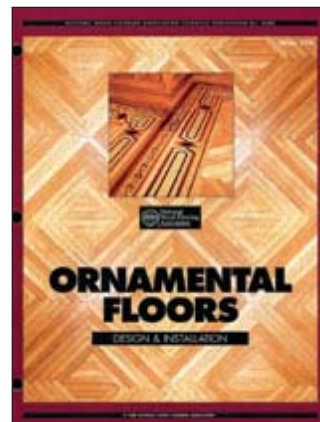
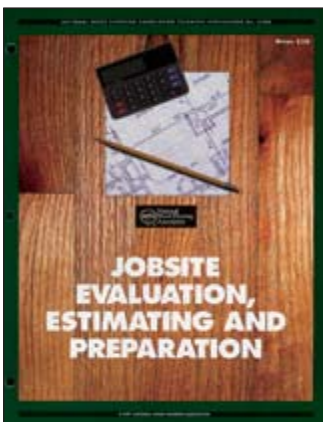
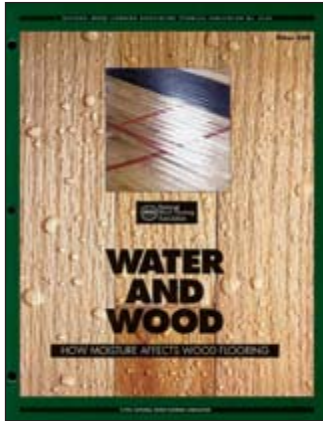
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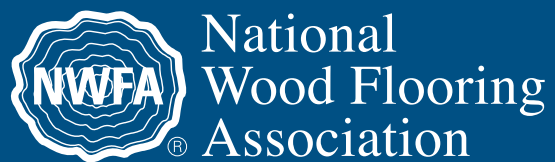
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RESOURCES

For more technical information, consult the other chapters in the NWFA's Technical Manual Series:



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