HOMEOWNER REPAIR GUIDE

REFINISHING A HARDWOOD FLOOR

*With a flat plate floor sander – using lead-safe work practices**

Are you contemplating sanding and varnishing your hardwood floors yourself? Till now, the tools most commonly used for this job have been a drum sander and a smaller edge sander – tools that, if not used properly, can produce deep gouges and waves in the floor. A different type of floor sanding machine is now available, one that makes sanding safer and easier for the do-it-yourselfer. This flat-plate floor sander (a larger version of the hand-held orbital palm sander) has a large, flat, rectangular pad that uses self-adhesive sandpaper to remove the old floor finish.

If your floor is badly stained or if the floorboards are cupped and must be evened out, you must still use a drum sander. Because a drum sander is more difficult to handle and control, take care when operating it – you can gouge, cup and burn the floor. For less complicated floor refinishing jobs, however, a flat-plate floor sander can give you professional results, even without experience. While it will not sand your floor as quickly as a drum sander, a flat-plate floor sander is quieter, does not produce as much dust, and needs no special tools to load the sandpaper. You can sand closer to the wall, so you probably won't need an edge sander.

Regardless of the machine you use, you'll need to decide on the degree of refinishing you want to do.

Redo	A REDO completely removes the old finish and possibly a light stain, sanding down to bare wood. If you want to change the stain color on the floor, a redo is in order.
Renew	A RENEW does a light sanding before you apply a floor finish, to return luster to a tired-looking floor. (You'd also follow this procedure when sanding a new bare floor.)

SETTING UP THE PROJECT / LEAD-SAFE* PRACTICES

If you have an older home, the finish on your floor may contain lead. If your floor was painted before 1978, the paint may be lead-based. While shellacs and varnishes did not usually contain lead, lead may have been used as a coloring pigment in the stain underneath it.

Hazardous lead-containing dust, leaded paint chips, and lead-contaminated trash can all be produced during remodeling and renovation, but dust is the most dangerous and hardest to control. If there is lead in the floor finish, using a floor sander will produce a great deal of lead-contaminated dust that can cling to clothes and skin, to walls and floors, and to furniture and floor coverings. Forced-air heating and air conditioning systems can spread that dust throughout the home.

PRESUME THERE IS LEAD

For that reason, you should presume that the surface might contain lead and make sure that appropriate precautions are taken by anyone refinishing the floors in your home. All children and pregnant women should leave the house until work is completed for the day and an effective cleanup has taken place. If the job cannot be completed in one day, the work area should be cleaned up sufficiently each day (see “Daily Cleanup” section) to ensure that occupants have safe, uncontaminated access to sleeping areas, bathroom and kitchen facilities, and entryways after work hours.

*ABOUT LEAD-SAFE WORK PRACTICES

The safest course is to have the work done by a licensed lead abatement contractor or a certified lead renovator, trained to minimize the chance of lead contamination. If you decide to do the work yourself, or to use a contractor who is not lead-licensed, at a minimum you should make sure that “lead-safe work practices” are used, as precautions to keep dust from spreading throughout the house. Lead-safe work practices generally include washing the area down with detergent and lots of water; however, since water should not be dripped on an unfinished floor, Home Repair Resource Center has made our best attempt to adapt lead-safe work practices to this job. The techniques suggested will reduce lead dust, but may not completely eliminate risk.

Before starting your floor refinishing project, take at least the following precautions:

- Close off the work area with air lock flaps, created by covering each entryway with overlapping sheets of 6 mil polyethylene plastic sheeting, taped in place with duct tape. Be sure to leave windows open for proper ventilation, if necessary. Allow only those doing the work to enter the work area.
- Remove furniture, curtains, food, clothing, and other household items until cleanup is complete. Items that cannot be removed from the work area should be tightly wrapped in 6 mil polyethylene plastic and sealed with duct tape until all work and cleanup is complete.
- Turn off forced-air heating and air conditioning systems, or at least close off all ducts that serve the work area, during remodeling or renovation. Then, cover heating and air conditioning vents with a layer of 6 mil polyethylene plastic sheeting. Tape the sheeting in place with duct tape.
- Cover openings, such as gaps around pipes and between floorboards, with plastic or duct tape to prevent lead dust from sifting down to lower floors and rising to upper floors.
- Cover all exposed surfaces that cannot be removed, such as countertops and shelves, with 6 mil polyethylene plastic sheeting, and tape in place.
- If work is being done in or near the kitchen, tape around the doors of refrigerators, stoves and cabinets to prevent dust from contaminating food and inside surfaces of food storage areas.
- When working in the project area, wear a HEPA (High Efficiency Particulate Air) cartridge respirator (see “Safety Equipment and Clothing” in the yellow pages) and disposable overalls and shoe coverings. Remove these items before leaving the work area.
- Read and follow the safe work practices (page 6) and personal cleanup tips (page 17) in the EPA handbook, *Reducing Lead Hazards When Remodeling Your Home*.

PREPARATION OF THE FLOOR

Before starting, you need to remove the quarter-round or shoe molding around the room, to allow the sander to get close to the edges. Then, double check to make sure there are no nails sticking up in the floor – they can rip the sandpaper.

REDO OR RENEW: SANDPAPER SEQUENCE

Depending on how much of the finish you want to remove, you'll use one of two sequences of sandpapers:

JOB	GRIT SEQUENCE	NOTES
Redo	36 grit (coarse) → 20 grit (very coarse) → 36 grit → 60 grit (medium) → 80 grit (fine)	Starting with 36 and then going to 20 gives a better bite for the coarser paper and is more effective. All grits are important, as each one serves an individual and progressive purpose.
Renew	A light sanding with 80 grit	The old finish is hard and probably quite smooth. Sanding will give a good mechanical bond for the new varnish coating.
New floors	60 grit → 80 grit	For NEW floors, a "renew" starts with 60 grit, and then finishes with 80 grit sandpaper.

LOADING THE SANDER

1. Ensure that the sander switch is in the "off" position.
2. Peel the back paper off the first piece of self-adhesive sandpaper and adhere it to the Scotch-Brite pad (which acts as a buffer between the floor and the sander, so that no gouging occurs.)
3. Put the pad on the floor with sandpaper side down, position and place the sander squarely over the pad, and you are ready to sand.
4. Press down on the release lever with your foot to lower the sander's arm and start the machine.

SANDING

Go slowly, letting the sander do the work. The sander will pull to the right, so sand from left to right. The coarser grits (36 and 20) work slower; they do the big job of cutting through the old finish. The medium and fine papers are faster; they do the smoothing. Keep an eye on the sanding dust you create; whenever the dust lessens considerably, it's time to replace the sandpaper sheet.

DUST COLLECTION AND SAFETY

Have an assistant vacuum the sanding dust as you go. This leaves less clean up later and lets you see your work area. Use a HEPA-vac (preferable) or at least a wet/dry type vacuum with a HEPA-filter and collecting bag, as sanding dust can harm the vacuum's delicate motor. Purchase several bags to have on hand. Empty the vacuum of dust often and in a safe manner (see "Daily Cleanup," below).

> **FIRE HAZARD**
>
> Turn off the pilot lights on gas appliances, and don't smoke during the sanding operation. (The fine dust can ignite.)

Once you have progressed through each successive grit of sandpaper – 36, 20, 36 (again), 60 and 80 – the floor will look ready for finishing. You may need a cabinet scraper (a thin rectangle of tool steel) to get the old finish in the corners, and a palm sander to reach the edges along the baseboard and the few low spots the sander could not

reach. Cut the used floor sandpaper to fit the palm sander, and sand the edges using the same progression of grits. There shouldn't be much to sand, because the floor sander gets close to the edge. Now you are finished sanding.

DAILY CLEANUP

If project is not completed in one day:

- Vacuum the floor several times, and clean the window casings and sills, door frames, and anywhere else the dust might settle. Carefully remove dust and construction trash from the filter bag (to prevent contaminating other areas) and dispose of it in heavy-duty 4 mil plastic bags. (If possible, pass the bags out a window to avoid carrying it through the house.)
- Wipe down walls, ceiling, and other surfaces with a damp rag rinsed in a solution of TSP, dishwashing detergent, or other lead-specific cleaning products. (Be careful not to drip water onto the sanded floor, as water spots will be difficult to remove.)
- Wipe down hand tools and the casing of the sander with the detergent. Dispose of used water down a toilet.
- Secure the work site whenever it is to be left unattended. If possible, completely seal off the entryways with 6 mil polyethylene plastic. If passage through the work area will be necessary, follow the above clean-up procedures so that the occupants will have safe, uncontaminated access to sleeping areas, bathroom and kitchen facilities, and entryways after work hours.

FINAL CLEANUP

Wait at least one hour after the repair is finished:

1. Vacuum the floor thoroughly to remove ALL the sanding dust from the room. Vacuum the floor several times, and clean the window casings and sills, door frames, and anywhere else the dust might settle. Carefully remove dust and trash from the filter bag to prevent contaminating other areas. Dispose of dust and construction trash in heavy-duty 4 mil plastic bags. (If possible, pass the bags out a window to avoid carrying it through the house.)
2. Wipe down walls, ceiling, and other hard surfaces within the room with a damp rag rinsed in a solution of TSP, powdered automatic dishwasher detergent, or other lead-specific cleaning products. (Again, be careful not to splash or drip the water on the sanded floor.) Wash all horizontal surfaces three times, changing wash water with each washing. Rinse with clean water; dispose of used water down a toilet. Work from the top of the room toward the bottom, cleaning ceilings first, then walls, counters and floors.
3. Carefully remove any disposable plastic sheeting used to protect surfaces by rolling or folding it inward and then disposing of it into a heavy-duty 4 mil plastic bag.
4. Vacuum any non-disposable tarps; then, roll or fold inward before removing them from the work area. If further cleaning is needed, carry the folded tarps outside and open them flat on the driveway. Once the tarps have dried thoroughly, vacuum them with a HEPA filter-equipped vacuum cleaner. Then fold the tarps for re-use.
5. Outside the airlocks at the doorways, wet-wash adjacent floors (within at least 10 feet) and other hard interior uncarpeted surfaces (within at least 5 feet in all directions) with TSP, powdered automatic dishwasher detergent, or other lead-specific cleaning product. Include walls and window sills. Wash all horizontal surfaces three times, changing wash water with each washing. Rinse with clean water; dispose of used water down a toilet. When mopping, use a disposable mop, since a mop used for this cleaning could spread the lead dust if it is later used for regular cleaning.
6. Vacuum baseboards, chair rails, window sills, casings, shelves and countertops again, once they are dry, using a HEPA filter-equipped vacuum cleaner. Then, to remove the last dust particles off the floor, "tack" the

floor using tack cloths (available at paint stores) or lint-free cloths just slightly dampened with water. Wipe across the floor, rinsing the cloths regularly to remove the dust. Let the floor dry, and you are ready to stain and/or finish.

STAINING

If you choose to stain your floor in order to change the color of the wood, think carefully about the products you will use. For example, a water-based polyurethane varnish may not be compatible with a sanding sealer (used to close the grain of the wood so that the stain appears more even on the surface) or an oil-base stain; in some cases, the water-based varnish may curdle like cottage cheese. Read and follow the directions on the product labels. If you want just the natural wood color, an oil-base polyurethane varnish will give an amber-honey cast to the wood, while a water-base varnish will be clear.

FINISHING

When the floor is ready to be varnished, you can use a good quality varnish brush and an applicator pad on a stick to apply the polyurethane. (A roller can leave a lot of fuzz and stipple marks on the floor surface.)

1. If you are using an oil-based finish, clean the applicator pad with mineral spirits prior to use. Rinse the pad with water if you're using a water-based finish. This rinsing will clear away any fuzz, loose fibers, or debris that would mar the finish.
2. Then, stir the varnish slowly with a paint paddle, to mix it without creating bubbles in it. Pour the varnish gently into a paint tray, and dip in the applicator.
3. Use the pad like a squeegee, pulling the finish gently down the floor. At the end of each room-length pass, turn around and return the other way, to keep a wet edge. Use a brush to get into tight areas and for edge work.
4. Let the finish dry, per label directions, before recoating. Sanding is NOT necessary between coats, but a light hand-sanding before the final coat will give a better appearance to the finish.

Refinished or new floors	Four coats recommended
Renew	Two or three coats

Let the coating dry completely before touch-ups. Coverage for each finish is on the label. Don't skimp – put on what is needed. The secret is not to get impatient, and to take your time.

Maintain your refinished floor by dust mopping and damp mopping, to keep off the dirt and grit that can act as sandpaper and grind off all your hard work.

HRRC TOOL LOAN

A Square Buff flat-plate floor sander, HEPA-vac, and respirators with HEPA cartridge filters are available to low- and moderate-income Cleveland Heights residents through Home Repair Resource Center's Tool Loan.

MATERIALS FOR THE SQUARE BUFF™ SANDER SYSTEM

MATERIAL LIST BY ROOM SIZE & SQUARE FOOTAGE	8' X 10' (80 SQ. FT.)	10' X 12' (120 SQ. FT.)	12' X 14' (168 SQ. FT.)	14' X 16' (224 SQ. FT.)
ScotchBrite Pad*	1	1	1	1
20 grit sandpaper	1	2	3	3
36 grit sandpaper	1	2	3	3
60 grit sandpaper	1	1	1	2
80 grit sandpaper	1	1	1	2
Quarts of wood stain (optional)	1	1	2	2
Gallon(s) of polyurethane floor finish (oil- or water-based)	1	1	2	2
Pad applicator & good-quality varnish brush	1 each	1 each	1 each	1 each
Refill applicator pad for staining (optional)	1	1	1	1
Tack cloths (sticky cheesecloth)	3	3	3	4

*Note: You can purchase an extra ScotchBrite pad to buff smooth the polyurethane finish before applying the final coating. This eliminates the need to hand-sand between the coatings.

Home Repair Resource center

Home Repair Resource Center empowers homeowners to maintain their homes for sustainable and diverse communities.

WWW.HRRC-CH.ORG | +1.216.381.6100 | 2520 Noble Road, Cleveland Heights, OH 44121 |
© 2026, Home Repair Resource Center