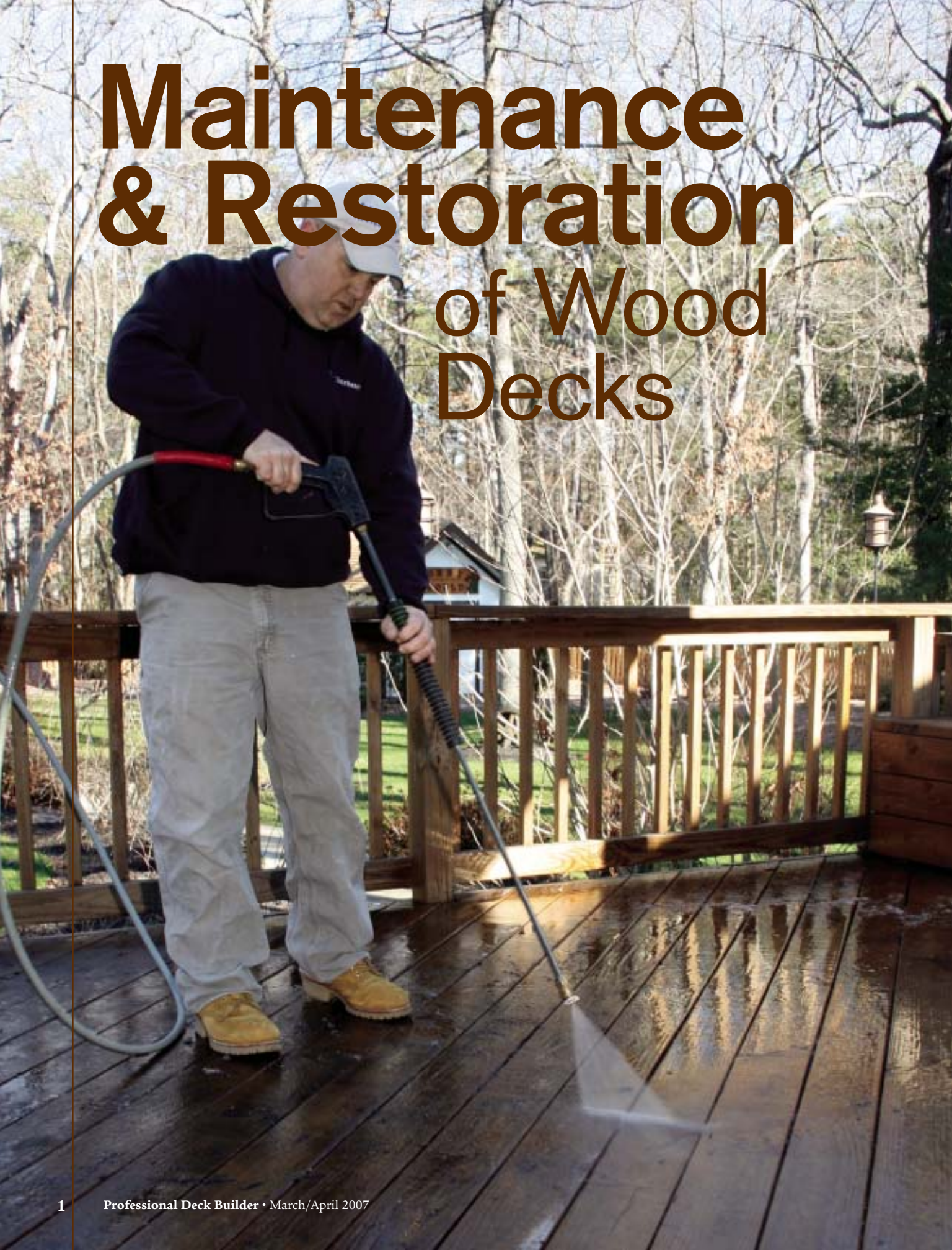


Maintenance & Restoration of Wood Decks



by Everett Abrams

Add a profitable sideline to your business with a pressure washer and some chemical know-how

The best customer is the one you already have — at least, that's what's often said in the remodeling industry. Build a relationship with a customer, and he'll have you back again and again. How can a deck specialist, though, make that model work?

The answer is maintenance — the 800-lb. gorilla in the room with a deck builder and his customers. When folks decide to add a deck to their home, they picture it freshly

completed and looking brand new. Who wants to dash that vision during the sales call by bringing up something as mundane as maintenance?

But a deck, like anything else, is new only once. Every deck needs regular maintenance, and far from avoiding that topic in your sales pitch, you should make a point of including it. Share the information in this article with the homeowners, and they can maintain the deck you built at its best, which is nothing less than a backyard billboard for you.

Even better, add deck cleaning and maintenance to your quiver of services, and a large number of those customers you've already established a relationship with are going to have you back annually to take care of what you've built (**Figure 1**). As a contractor, your investment in equipment will be minimal — a pressure washer (see sidebar, page 5), a couple of garden sprayers, and some brushes.

Keeping existing customers is one of the benefits of a deck-maintenance business, but you might find that your most loyal fans are new customers who hire you to fix a poorly maintained deck. That's because even the decks that have been cleaned and sealed regularly look terrible if it's been badly done. Some finishes actually feed mold and mildew, or attract dirt. Multiple layers of finish muddy the look of the wood. To someone who owns such a deck, you're a magician. They've watched their deck go downhill



Figure 1. A few hours labor spread over two days restored this deck to nearly new condition. An initial rinse was followed with one application of stripper, and one of brightener. After a few trouble spots were sanded, the deck received a finish.



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Figure 2. Cleaners make quick work of common finish problems such as stains and mildew. Items like potted plants, patio heaters, or grills leave stains. Mildew and fungi grow on damp wood, fed sometimes by linseed-oil-based finishes.



despite their attempts at maintenance, and you do something no one else has done — make the deck look good again (Figure 2). That's what my company, Deck Restoration Plus in Shamong, N.J., has been doing for 15 years.

Poor Maintenance Is Nearly as Bad as None

The first and most costly mistake that many people make is to assume that all they need to do to clean a deck is grab a pressure washer and start blasting away. A pressure washer and pressurized water alone doesn't restore wood, it damages it. Too much pressure or unskilled use causes splintering, raised grain, lap marks, and severe etching (Figure 3). The remedies to these issues range from sanding the entire deck to replacing boards.

Now, a pressure washer has a role in deck cleaning, but it's not a solo performance. A good analogy is cleaning an oven. It would take forever and a day to scrub off the baked-on buildup with just water and elbow grease. But spray oven cleaner on the surface, give it time to work, and



Figure 3. Be careful out there. The cross-grain scars on this decking were caused by a pressure washer being held too close to the wood.

it's relatively easy to wipe off the surface to a like-new condition. This same principle applies to successful wood restoration. A cleaner lifts the buildup to make it easier to remove without damaging the surface underneath.

Getting the Grunge Off

Some wood decks simply need cleaning, but others need to be stripped of old finishes. If the existing finish is in good shape, and only a maintenance coat of finish is needed, use a deck cleaner and lightly wash. After the deck dries, apply the maintenance coat. Vertical surfaces might need this coat only every other time.

Even if the existing finish looks bad, a wash might still be all that's needed. A "splash test" will tell you if there's an existing finish that needs to be stripped off (Figure 4). Throw some water on the wood's surface. If it soaks in, a

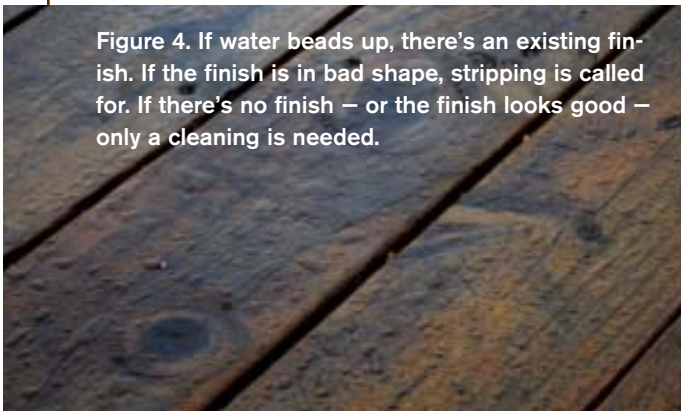


Figure 4. If water beads up, there's an existing finish. If the finish is in bad shape, stripping is called for. If there's no finish — or the finish looks good — only a cleaning is needed.

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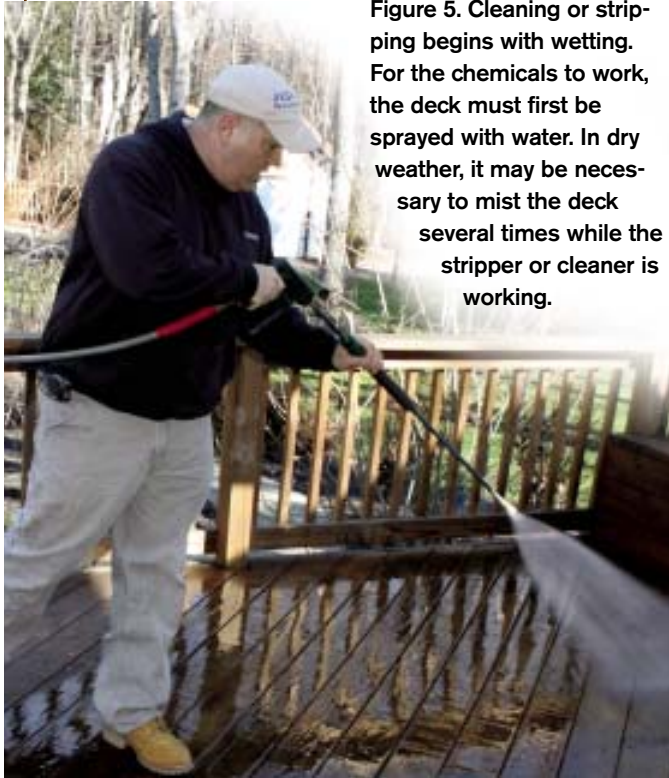


Figure 5. Cleaning or stripping begins with wetting. For the chemicals to work, the deck must first be sprayed with water. In dry weather, it may be necessary to mist the deck several times while the stripper or cleaner is working.



Figure 6. Apply the chemicals with a garden sprayer. To verify correct application rates, compare the square footage of the deck, the amount of product you're using, and the manufacturer's suggested coverage.

cleaner is all that's needed. If the water beads up, you need to use a stripper.

My company uses cleaners containing either oxygenated bleach or sodium percarbonate. Chlorine-bleach cleaners can be effective, but they are harder to use properly. The wood stripper we use is sodium hydroxide based. A good

professional stripper will melt off the existing coating or finish, making it easier to remove.

You use cleaners and strippers in the same way. Mix a concentrate with water in a pump-up garden sprayer. Remove loose material such as leaves from the deck, wet the deck down with a hose or a pressure washer (**Figure 5**), and spray on the cleaner or stripper (**Figure 6**). The manufacturers of strippers, cleaners, and for that matter, finishes, all provide coverage rates — how much product is needed for a given number of square feet. This is useful information when ordering the products, and it's also a way to tell if you're using enough. If the manufacturer says a gallon covers 400 sq. ft., but you just did that area with a half gallon, something's wrong.

Cleaners and strippers both need "dwell time" to work. The length of time varies with the temperature and humidity: longer in cold weather and shorter in hot weather. If it's too hot, however, the water evaporates and the chemical stops working. You may

SAFETY

The chemicals used in deck cleaning can be strong enough to cause burns. Particularly when working with the concentrates, it's smart to wear eye protection and rubber gloves. Cleaners and strippers are slippery, and care should be exercised when walking on surfaces that are slick with them. Be sure the customer knows that they and their pets must stay off the deck when you're working.

Follow the manufacturer's directions for protecting plantings. Some recommend tarping plants and shrubs; you should at least wet them down with clean water before starting, and again after finishing.

Pressure washers present their own dangers. Water spraying from them can be at a high enough pressure to be injected under the skin. This is a medical emergency, and requires a visit to the ER. Never place any body part into a pressure washer's spray pattern.

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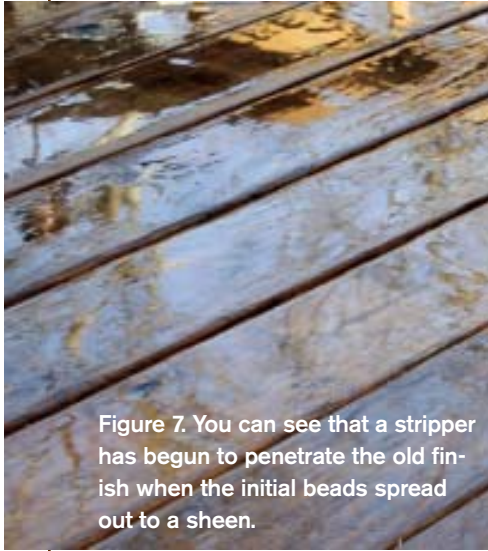


Figure 7. You can see that a stripper has begun to penetrate the old finish when the initial beads spread out to a sheen.

need to mist down the area to keep the chemical active.

Strippers need a longer dwell time than cleaners to work effectively. You can tell when they've done their work in a couple of ways: Water no longer beads on the surface, and a very light test scrape will pull off the film (Figure 7).

Cleaning or stripping should leave a consistent look, with the deck being generally lighter in color. Dark spots could mean that some existing finish remains, and you may want to re-apply and wash again.



Figure 8. After the old finish has softened and lifted so it easily scrapes away (don't scrape caustic stripper with a fingernail!), a pressure washer sluices off the grunge.

Solid body stains, which are more permanent and film-forming, may require several applications of stripper, and what remains will need to be sanded. They don't have to be recoated as often, but when they do, there's more work involved.

CHOOSING A PRESSURE WASHER

For a deck builder adding deck maintenance to his services, I recommend a pressure washer that delivers at least 4 gallons per minute.

A 4-gpm machine works well with available attachments and that volume will get the job done in an efficient amount of time.

I don't recommend a particular brand as much as I recommend a belt-drive machine. These outlast direct-drive pressure washers.



Washing and Brightening

Once the stripper or cleaner has finished working, you need to rinse it — and the grunge it has lifted — from the deck. If you've used the correct cleaner or stripper and dwell time, most wood can be rinsed using a garden hose. However, pressure washers will save a lot of time if used correctly — several hours on an average deck (Figure 8). A two-man crew might save four hours a day by using a pressure washer, enabling them to complete an extra deck each day.

A range of 300 to 1,000 pounds per square inch on a pressure washer is often all that is needed for wood

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surfaces. Use lower psi settings when working with softwoods like cedar, and slightly higher settings when working with hardwoods like mahogany. The idea is to avoid scarring the wood with the water pressure. Always use a wide fan spray. One way to reduce the pressure at the tip, while still maintaining a sufficient flow of water, is to use a tip with a higher flow rate. I use a tip that produces a 40-degree spray fan, and whose maximum flow exceeds that of the pressure washer (**Figure 9**).

If you encounter a difficult area, it's better to leave it to be sanded rather than increase pressure or get too close with the wand — either of these can scar or splinter the wood, and then you will need to sand anyway.

I use a pendulum or golf-stroke motion that allows the water to continually flow. Stopping and starting the water



Figure 9. Use the right tip. The first two numbers on a pressure washer tip indicate the width of the spray fan. This one is 40 degrees, right for washing decks. The next three numbers are the flow, in this case 4.5 gpm. To avoid damaging the machine, always use tips with a greater flow capacity than the machine can provide.

flow on the wood will cause lap marks and etch the surfaces. Always work with the grain of the wood when cleaning, and keep the wand 6 inches or more away from the surface, depending on the psi rating. The wand needs to be only close enough to remove what the cleaner or stripper has lifted. Getting closer increases the likelihood of damage and will not get the project done any sooner. I don't adjust the psi at the machine, but rather move the wand farther or closer from the deck, as needed. Starting farther away and moving closer, rather than starting close and moving away, reduces the chance of damage.

After all the wood surfaces are clean comes another important step that is often skipped. This is surface neutralization or "brightening" of the wood (**Figure 10**). Cleaners and strippers are alkaline, or bases, and darken the wood. To make the wood appear as "like new" as possible, apply a brightener. The active ingredient in brighteners, oxalic acid, neutralizes the alkaline cleaner or stripper — important if you want the finish to adhere properly later, because alkalines remaining on the deck can react with the oil in finishes and saponify, or form soap, which prevents adhesion.

The brightener reacts with tannins in the wood to lighten it close to its natural tone. Oxalic-acid-based brighteners work quickly, so you can see any missed areas right away. They also remove iron or metal stains caused by nail bleeds and such. After the brightener has been applied, it's allowed to dry for approximately 48 hours before coating, if needed. The brightener leaves the surfaces chemically neutral and rinsing is not necessary.

Before leaving the deck to dry, check for dark spots that need a second application of brightener. The better it looks prior to coating, the better it will look when complete. While this sounds like a lot of work, it goes quickly. A two-person crew can wash two to four decks on an average day, depending on the sizes of the decks. At about \$1.25 per sq. ft. for a basic washing, there's good opportunity for income here.

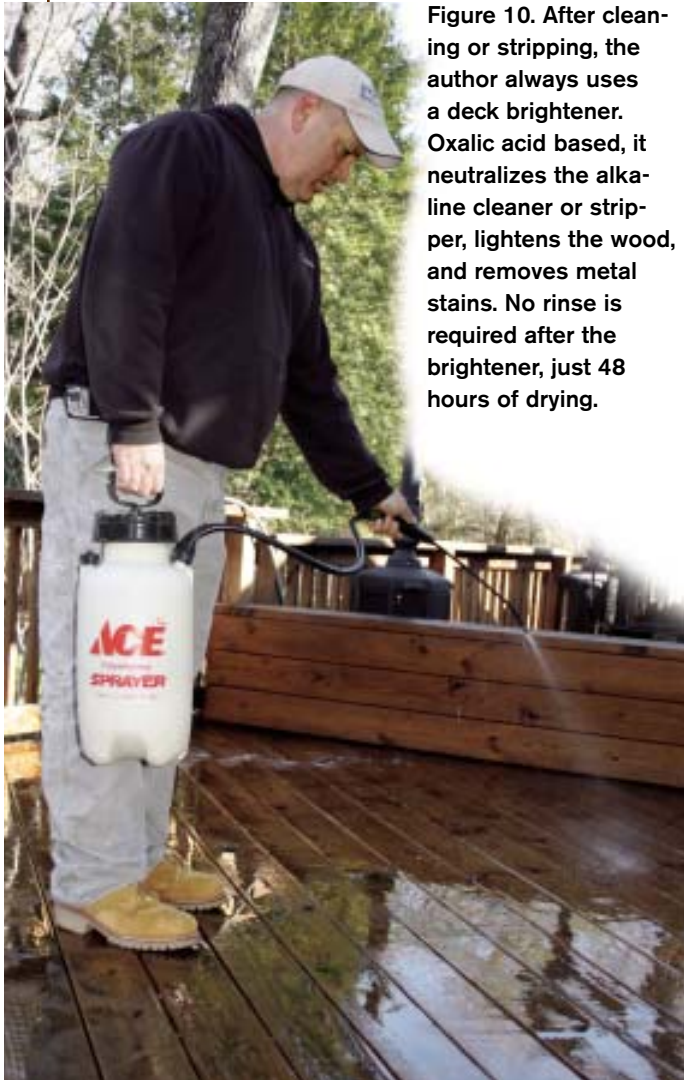


Figure 10. After cleaning or stripping, the author always uses a deck brightener. Oxalic acid based, it neutralizes the alkaline cleaner or stripper, lightens the wood, and removes metal stains. No rinse is required after the brightener, just 48 hours of drying.

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Finishing Up

The more preparation you do, the better the deck will look when the finish is applied. It is important now to perform any sanding or address problem areas before applying a coating. Take a few minutes to inspect for areas that might need sanding. Look for any remaining stain or sealer, or any area with an inconsistent look. I have never done a deck that did not need some sanding, even if it was just a light touch-up on the handrails (**Figure 11**). In the very worst cases, you'll need to use a floor sander on the entire deck.

To avoid a blotchy look, it's important not to change the wood's surface characteristics much or close the pores in the wood. I sand with 80-grit sandpaper, and feather in around a sanded area so that any change in the way the wood absorbs the coating is gradual.

When the wood is fully prepared, it's time to apply a finish. Choosing one is a large decision, complicated by the range of products available. Some products are easier to maintain, while others last longer. There is no one best coating for all circumstances. You have to ask a lot of questions. Who is going to perform future maintenance? Does the owner want a color stain or clear coating? Will a water-based or an oil-based product be better? Where is the deck located?

Matching products to the answers to these questions is beyond the scope of this article. Talking to manufacturers and knowledgeable paint-store employees is a good starting place. Very generally, for hardwoods I recommend a parafinic or mineral-oil-based penetrating oil that is easy to

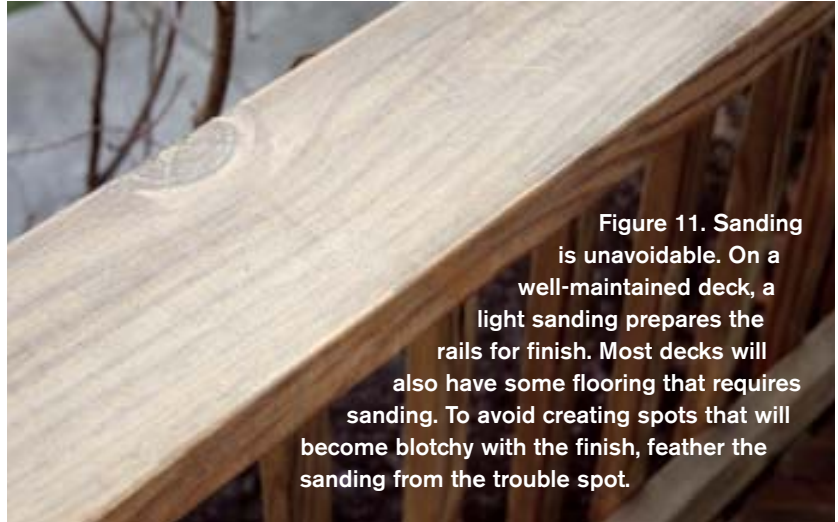


Figure 11. Sanding is unavoidable. On a well-maintained deck, a light sanding prepares the rails for finish. Most decks will also have some flooring that requires sanding. To avoid creating spots that will become blotchy with the finish, feather the sanding from the trouble spot.

maintain. Ready Seal (888/782-4648, www.readyseal.com) is a good choice. I avoid film-forming oils on hardwoods, as they are prone to peeling because of the density and oil content of these woods.

Many products work well on soft woods like cedar and pressure-treated pine. You have to balance appearance and maintenance. Penetrating oil finishes tend to be easier to maintain and recoat, while film-forming finishes tend to crack and peel, and are harder to maintain and recoat. Cabot (800/877-8246, www.cabotstain.com) is a mainstay that's been rated very well by *Consumer Reports* magazine for many years. Another good product is Flood's Supreme Performance (800/321-3444, www.flood.com).

You can apply all these products by sprayer, roller, lamb's wool mitts and pads, and brushes. In my experience, the most effective method is using a Bestt Stainer China bristle brush (800/523-9095, www.besttliebco.com). It's soft and

holds more product, so it's easier to apply stains and sealers (**Figure 12**). One worker should have no problem sealing or staining 100 square feet of decking an hour by brush and quicker if using a sprayer. I carry several sizes of them for doing deck boards and railings.

Most coatings will need approximately 24 hours to completely dry, and your customer has to commit to staying off the deck for the period. ❖

Everett Abrams is president of Deck Restoration Plus, which offers both deck-cleaning services and franchises. He is also an instructor for the Power Washers of North America (www.pwna.org), and sits on the USDA Forest Products Laboratory's Joint Coatings/Forest Products Committee.



Figure 12. The slowest way is best. Most finishes can be sprayed, but the author gets the best results from China bristle brushes. For speed and a healthy back, get brushes with handles that can be removed and replaced with a broomstick.