STRIPPING & REPAINTING WOOD SIDING

It's a labor-intensive job, but skillful use of the right products and equipment will ensure success

By Mike Shannahan

I work almost exclusively on the restoration of older homes, and I thoroughly enjoy the challenges and opportunities that routinely present themselves. Paint removal and re-application is the meat and potatoes of exterior renovation, and is without a doubt the highest-profile part of my work. Because the paint job is so exposed to public scrutiny, it demands nothing less than the highest quality of workmanship.

Unfortunately, painting is often relegated to the least skilled and undermotivated workers, with predictable results. I find it's usually necessary to impress upon clients the importance of a quality paint job. If I feel a potential customer is looking for the cheapest job possible, I recommend they call someone else: I value my reputation too much to risk it saving the client a little money.

First Things First

The climate along the Gulf Coast, where I live and work, can be pretty unforgiving. Once the paint job on a home has been neglected, it doesn't take long for siding, windows, porches, and trim to begin to deteriorate. So before I think about opening a can of paint, I usually have exterior repairs to make.

Windows. Although some clients are preservation purists and insist that I remove and overhaul the old

double-hung sash, as often as not this isn't even an option, because the wood sash have long ago been "upgraded" with mill finish aluminum windows. When replacement is warranted for whatever reason, my favorite reproductions are Andersen or Marvin tilt-wash wood double-hungs. The products of both companies are similar in appearance to the original windows, and have the added advantages of being more energy-efficient and easier to operate.

In overhauling an old window, I pay particular attention to the sills, which tend to deteriorate first. Unless the sills are in first-class condition, I typically replace them with pressure-treated yellow pine milled in my shop to an angle of 19 degrees (see Figure 1). This sheds water much better than the original slope, which generally seems to run around 13 to 15 degrees.

Figure 1. The author makes replacement sills from pressure-treated Southern pine. At 19 degrees, they're angled more steeply than the originals to shed water better.

I do a fair amount of single-pane reglazing as well, mainly using a latex window putty made by DAP. It comes in a self-tooling caulk cartridge, and seems to be a little more mildew-resistant than the old DAP-33 oil-base putty (which is still an excellent product). Remember to always prime the bare wood in the glazing rails *before* puttying and to set the panes in a bead of putty to help seal out moisture and prevent rotting of the muntins.

Siding. Siding repair and replacement usually follow window work. As a general rule, if I have to replace more than about one-third of any given wall plane, I won't try to replace individual boards. It's quicker to remove them all, cull out the bad pieces, and re-install the rest with the back side facing out. This eliminates much scraping and sanding. Often, the old siding is so weathered on the exposed face that the rough-sawn back blends in fine; occasionally I may have to hit it with a palm sander. I try to preprime all siding before installation or re-installation.

Figure 2. Double-nailing, evident at the right end, caused this cypress siding to split. Caulk buildup along the paint line indicates someone tried to seal the joints between clapboards, a fatal error that leads to paint failure when water can't escape from behind the siding.

Figure 3. A Porter-Cable 7402 disc sander with a stripping attachment provides the muscle for cutting through years of paint buildup. The stripper should be held flat to the work for best results.

Probably the most common mistake I see with clapboards in new construction is double nailing — nailing the bottom of a clap through the top of the one below it (Figure 2). This prevents the clapboard from moving with moisture changes and the shifting of the building, thus the siding may split in time. The proper nailing technique is to place the nail above the top of the lower clap — something most good carpenters understand. Occasionally, though, I come across an old house with double-nailed siding. The clapboard in Figure 2 was from a late nineteenth century home where I ended up having to replace more than 4,500 linear feet of siding that was beyond salvage. The irony is that the bald cypress boards showed no sign of natural deterioration, and the areas of the house where it was properly nailed were in good shape (apparently, there were

both carpenters and wannabes on this site over 100 years ago).

Moldings. Replacing rotted moldings is key to maintaining the vintage look. Since replacement molding can be difficult to find (not to mention expensive), I maintain my own fair-sized salvage yard. I also manufacture much of my own. Sometimes, too, I'll strip moldings and trim from low-visibility areas like an attic dormer or back porch to make matches in high visibility areas like the front porch. Another good source for original moldings is the vinyl siding contractors in my area, who will let me know when they're about to pull off some nice old moldings before covering rakes and frieze boards with coil stock.

Scaffolding. Since I usually do extensive carpentry repair and paint stripping before painting, I always set up scaffolding as a work platform for any areas higher than 5 or 6 feet off the ground — it's well worth the time in both safety and productivity. I build it up as I move up the wall, keeping material well stocked to avoid having to constantly climb up and down. I also use pump jacks and ladder brackets. I do most of the painting off of ladders.

Stripping Old Paint

Most of the houses I work on have years of paint buildup, complete with flaking, "alligatoring," and mildew to boot. There's no way to paint over a mess like that with any hope of long-term success, so I have to mechanically strip the paint. When the paint is in good shape but the client wants a different color, I'll scrape, sand, and feather in the spots that need attention, hand wash the whole house (more on this below), then repaint. If more than a third of the house is peeling and flaking, I'll usually strip the whole thing rather than risk repainting over an unpredictable substrate.

When stripping is in order, we remove the old paint using Porter-Cable disc sanders (#7402) with a paint remover attachment and tungsten carbide discs (Figure 3). Before starting a whole-house job, I'll gear up with extra backing pads and 50 or 60 discs so there's no downtime cleaning them as they gum up (Figure 4). They cost about $8 each, and I allocate them to equipment overhead. Disc life is variable; they can last for several jobs as long as they don't get damaged. I mainly use 24 and 36 grit.

Stripping goes quickly most of the time. We work top to bottom, "boxing out" one section of wall at a time. This is a technique I learned working for a sandblasting contractor years ago. I box out an area about 3 feet wide by 6 feet high. This allows me to easily keep track of where I've worked in what can be at times dusty, low-visibility work. The technique is also very useful for pressure-washing and is critical when applying top coats.

Figure 4. Shown in the top photo are a worn backing pad, flanked by a new pad, top, and a new carbide stripping disc. As soon as discs begin to gum up (middle photo), the author soaks them in stripper. Discs must be regularly inspected for damage. Those with stress cracks (indicated by pencil in bottom photo) are discarded.

Figure 5. Paint stripping is dangerous work, and requires full personal protective gear.

Figure 6. The author uses carbide scrapers (above) and painter's picks (right) to remove paint and caulk buildup at the bottom of clapboards. This ensures good ventilation behind the siding.

The disc should be held flat to the work, or the pad will wear rapidly. An unevenly worn pad is absolutely useless. If this happens more than two or three times a day, I'll replace the operator along with the disc.

Once paint builds up on a disc, you're money ahead to throw it in the cleaning bucket and grab a new one. I soak the discs in a bucket of floor stripper (the same stuff used to remove vinyl flooring mastic), then remove the gummy buildup with an angle grinder fitted with a wire-brush cup. We clamp the grinder to a sawhorse, then carefully feed the discs into the spinning wire brush.

Though we try to avoid it, occasionally we'll hit a nail and damage the disc. Cracked or jagged discs should be immediately discarded for safety reasons. We always check cleaned discs for damage and stress cracks before returning them to duty.

Power stripping is a job for experienced help — 24- or 36-grit abrasives spinning at 5,000 rpm can inflict serious damage to person or property in the blink of an eye. My workers fully understand that not using appropriate safety gear — eye protection, respirator, and ear muffs — is grounds for immediate termination (Figure 5).

Hand work. Detail work is time-consuming but necessary. My helpers all carry a five-way painter's pick (Figure 6), a carbide paint scraper (if you've never used carbide, try it — you'll never use a standard steel scraper again), a wire brush (stainless outlasts black iron by a factor of about ten), and Glit sanding sponges to assist where power stripping is impractical (curved moldings, corner brackets, dentils, and so forth). It's sometimes easier to remove molding for chemical stripping, and I generally backprime it before re-installation.

We make a special effort to remove paint buildup on the bottom edge of clapboards, which reduces the building's ability to breathe and shortens paint life. All too often we see that someone has tried to caulk this joint — always a bad idea.

Don't Overuse Pressure-Washing

In my opinion, pressure-washing is often misused, or at least mishandled. Most problems occur because too often it's used in an attempt to blast old paint off a surface. This is a bad idea for two reasons: It's not the best way to remove paint, and it pumps water in behind the remaining paint film where it may not be able to dry before repainting is done. This can cause premature paint failure.

For me, the goal of pressure-washing is to deep-clean into the grain of wood, where sanding and scraping don't reach. I only use it on bare wood — wood that's been scraped and sanded or that's been weathered bare. I use a 3,000-psi fresh water wash (no detergent), followed immediately by a thorough fresh water rinse (Figure 7).

I don't pressure-wash smooth siding, because it raises the grain and the nap, and I don't pressure-wash painted siding. Instead, on smooth and painted siding, I sponge wash with a solution of 1 part Clorox, 3 parts water, and 1/2 cup of TSP per gallon.

I highly recommend good quality equipment (Figure 8). Besides the direct and indirect costs of breakdowns and slowdowns, better equipment produces better results. I use a Northstar model 4SF40GSI I bought from Northern Hydraulics (800/556-7885) several years ago. The CAT triplex pump can put out 4 gpm at 3,500 psi when the 13-hp Honda pushing it is wide open. It's been trouble-free for almost three years, averaging 10 to 15 hours runtime per job.

I use one of four color-coded tips, depending on the water force and fan shape I want. The black tip, used for soap injection, gives 1,100 psi and a 65-degree fan; green, 2,167 psi at 40 degrees; yellow, 2,500 psi at 25 degrees; and red, 3,000 psi at 15 degrees. The red tip produces a cone-shape spray rather than a fan; it can wear a hole in wood siding in a second or two. Obviously, pressure-washing should not be relegated to inexperienced helpers.

All washing needs drying time — three or four days for a hand wash, up to

Figure 7. Pressure-washing stripped siding deep-cleans the pores of the wood. Note how the author "boxes out" an area of work, and the difference between the unwashed wood (top) and the washed wood (above).

Figure 8. The author uses a 13-horse 3,500-psi Northstar pressure-washer.

Figure 9. The oil-based primer is typically sprayed (unless neighboring houses are too close or the clients insist on brush and roller only). Note the treated nail heads, and how the author boxes out the work area (above). The author uses a Titan Epic 660 sprayer (right), which can handle unthinned paints without clogging.

Figure 10. The final top coat is always brushed on, trimwork first.

two weeks for pressure-washing. I always err on the conservative side rather than risk paint failure.

Hand-Sanding

Washing will sometimes raise the nap of wood, and some sanding with electric palm sanders or sanding blocks is needed. Sometimes it's hard to knock down that last bit of fuzz, so I'll go ahead and shoot a coat of oil-based primer. After curing, this stiffens up the remaining nap so that it sands nicely.

Treating nail heads. We also spot-prime all exposed nail heads with Rustoleum galvanizing compound from a spray can. This helps prevent rust bleed through finish coats. It's somewhat time-consuming, but it's one more fine point that separates professional workmanship from garden variety painting.

Priming

I normally try to spray all my prime coats (Figure 9). I use an oil/alkyd primer cut by about 10% with Penetrol, an additive that improves absorption rates, adhesion, and workability.

Spraying is a little trickier than it looks. The proper technique is to hold the gun perpendicular to the work surface, although a slight angle on second passes ensures good penetration into cracks and molding details that would be difficult to uniformly treat with a brush. My experience is that, all other things being equal, spraying produces a more uniform coverage than brushing or rolling in a fraction of the time.

As with pressure-washing, high-quality work is easier to put out with high-quality equipment. My Titan Epic 660 EX has a design rating of .6 gpm. Lighter-duty rigs often can't handle unthinned coatings, and since over-thinned paint can be a cause of premature paint failure, trying to save money on junk equipment is not worth it. I spray with a Graco model 235-463 gun on the end of a 100-foot hose.

Remember to use the right tip gasket and properly-sized tip for the paint being applied. Normally this information is printed right on the paint can.

The pump is set according to the skill of the sprayer: If you're doing this for the first time, practice on a piece of plywood or the back of the garage until you get the feel for the work and can spray with uniform coverage. I try to work from top to bottom and, because I'm right-handed, from left to right. Again, I use the boxing technique, leaving a tall wet edge to work into.

I use a self-cleaning tip, which has a small valve you can open to clear paint clogs. This virtually eliminates drips and runs, so I don't have to back-brush. Of course, if an unskilled operator sprays too thick a coat, you may still have to brush it out.

A caution. Many clients are under the false impression that spraying produces an inferior job. This is because many painters use spraying only to speed production, but without taking the care to ensure a durable job, so it's gotten a bad rap. I'm always careful to explain to prospective clients that I use spray equipment, in case they have a preconceived notion that all paint should be applied "by hand." The time to find this out is before you price the job. For clients who insist on brush and roller, I adjust the labor cost accordingly.

Caulking. Caulking always follows priming. Priming first helps to highlight cracks and holes in the siding. It's important to get good primer penetration in these areas. Otherwise, tiny amounts of water will get in behind the finish, laying the groundwork for early paint failure. If the holes are caulked first, when the caulking shrinks or comes loose, the bare wood will once again be exposed. So thoroughly prime holes, splits, and other imperfections, then caulk.

As mentioned above, never caulk the bottom edge of clapboards or above window head flashings. These areas must be free to drain water that gets behind the siding. Although opinions vary on the subject, I always cut claps 1/8 inch short to allow for caulking where they butt window and door casings and other vertical trim. I use DAP's Alex 25-year painter's caulk.

Pros & Cons of Oils & Latexes

It's the million dollar question: oil or latex? My answer — it depends. I have found that siding material is a better determinant of paint performance than the type of paint. For cedar and redwood, I always use oil-based primer and top coat, specifically to stop tannin bleed. With Southern yellow pine and bald cypress, which are the other two dominant types of wood siding in this area, I use an oil-based primer but a latex top coat. For Southern pine in particular, I think latex is the better choice because it tends to be more flexible. Southern pine tends to shrink and swell across the grain more than other species, and latex can handle this better without cracking.

As for latex primers, regardless of what the manufacturers claim, I haven't yet found one that blocks bleed. On a recent job for a client who couldn't tolerate the smell of oil, I had to use two coats of latex primer — a primer that was specifically made to stop tannin bleed. After two prime coats, the cedar siding was still bleeding through, and three top coats later, there were still areas I had to touch up. Not only did the clients pay for two extra coats, but the first time the paint fails, that job may have to be stripped down because of the extra build.

In general, I tend toward oil-based paints. In a nutshell, here's my take on the pros and cons of each type.

Oils

Oil penetrates well, whereas latex forms a film on the surface, so I prefer the penetration of oil for the prime coat. Oil also provides a tough film, high gloss, and better workability.

On the downside, oils mildew worse than latexes, they tend to crack on woods that are prone to movement, and there can be disastrous consequences in the event of a big spill. Several years ago, I knocked over a five-gallon pail of latex on the roof of a house I was building. Fortunately, I was able to get a water hose to the area, and within about ten minutes was able to wash off the roof and nearby siding. If that had been alkyd-based paint, I would have had to reroof that entire area of the house.

Latexes

Latexes offer a wide selection of colors, they clean up with water, and they don't support the growth of mildew (although mildew will eventually grow on latex-painted surfaces).

On the negative side, they cure quickly, which means that they make spray equipment harder to clean. Spend three hours spraying latex and it's like the equipment has been coated with gunnite. With oil, if it sets up, you can go back and clean it with thinner.

Latexes also don't flow as well as oils, and show brush marks much more readily. And, as mentioned above, they won't stop tannin bleed.

Involve the Clients

I always encourage the clients to do their own research and get involved in the decision. But I insist on using a high-quality professional-duty product. I typically use paints made by ICI De Voe, and have also had good results with Sherwin Williams and Benjamin Moore. As for product warranties — you're on your own. The fine print always makes it clear that labor is not covered. — *M.S.*


A vintage house stripped and ready to prime (left). The finished gem (right).

Top Coats

As for top coats, the most frequently asked question seems to be, "Do I use oil or latex?" There is no definitive answer here — both have good and bad points (see "Pros & Cons," previous page). I encourage my customers to do their own homework in this area. My personal preference is oil base, mainly because its slower cure time compared with latex makes it easier to apply and clean up, so it's not as hard on my equipment. It is, however, marginally more expensive.

I always add M-1 brand mildew retarder to paint, whether oil or latex, although oils foster mildew growth more than latexes. The M-1 has the consistency of toothpaste, so I always have the dealer mix it in. I also put it in the primer at half strength, and in both top coats (even though many painters use it only in the final coat).

Trim first. Each job is different, but I generally try to paint all trim work before proceeding with the body colors (the opposite of what I often see done). This allows me to be quite sloppy around window edges, corner boards, and moldings, and cutting in need only be done once, during application of the final top coat. This saves labor while allowing a liberal amount of paint to be worked into areas that need it most.

The first body top coat can be sprayed to save time and produce a uniform color base, but the last coat (and I *always* use at least two top coats) should be brushed (Figure 10). This is the final "one inch at a time" inspection that assures all areas are covered and produces a really nice finished product. Boxing out is critical at this stage. Besides giving me a nice tall wet edge to work into, it ensures that I don't miss an area.

During finish painting, I "stage" all paint in one area with a container of appropriate thinner, cleaning buckets, and extra paint for each color. As painters wash brushes (they should be doing this at least every hour or so), no time is lost looking for supplies. A spinner and wire brushes should be in this area. Large buckets of thinner for oil-based paint or clean water for latex give the help someplace to drop brushes while shifting ladders, taking a break, mixing new paint, and so forth. Paint should always be back-mixed — that is, don't ever run a can dry, but always top it off from a new can and stir it up whenever it starts getting low. This will ensure uniformity of color across the job.

I always work from the top down, trim work first, following the shade around the house. Painting on solar-heated siding can cause instant paint failure with latex paint, and severe orange peel with alkyd-base paint. Make sure to apply plenty of paint along the bottom of claps and shakes: Dewdrops accumulate here and will cause bleed discoloration if the paint has not been properly applied.

Getting Paid

In my estimation, prep work counts for about 75% of the job — both in dollar figures and in ensuring the success of the paint film. Accordingly, I collect 50% of the cost of the job after stripping, 25% after caulking, and 25% on completion. Almost all my work is repeat customers or referrals, so I've never had a problem collecting. The biggest issue with pricing is explaining to a client why my $7,500 price is justified compared with the $1,200 lowball bid from the guy who plans to slap some new paint over a lousy substrate and move on.

As a final note, I always make the client choose the colors and color schemes. It's their house, and it doesn't matter what I think looks good (and I've painted a few that I didn't care for.) On one of those painted-lady schemes, I try to get the client to go out to the back of the house and paint an area the way they think they want it to look. (Besides giving them a chance to see the colors in place, it also gives them an idea of what it takes to do a nice job.) I'll do this for them if they don't want to do it themselves. And more often than not, they'll make a change in one or more of the colors.

Mike Shannahan *owns and operates Mike Shannahan Master Carpenter, a residential contracting business specializing in historic restoration in the Galveston Bay area of Texas.*