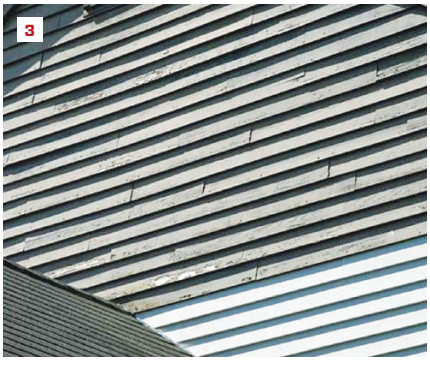
BY NIGEL COSTOLLOE



While the painters' work affects how good the paint job looks **(1)**, what happens before they arrive affects how well the job performs over time. Bowed and buckled clapboards are often caused by interior moisture driving through siding that has not been back-primed **(2, 3)**.

Avoiding Paint Callbacks

As a custom painting contractor in the Boston market, I've spent a good part of my lifetime studying the way paint works. That includes taking courses and seminars provided by the Painting and Decorating Contractors Association, which I think every professional painter ought to join (I'm the president of our local chapter's residential forum; painters interested in best-practice solutions are encouraged to visit pdcaresidentialforum.org).

While formal training for painters is certainly helpful, experience is still the best teacher. And when you think about it, painters are in a unique position to learn from experience, because we revisit projects years after construction is complete. Few builders have that opportunity; they might build a new project for a client and have a punch list at the end of a job for minor mistakes or things that didn't get finished. But builders don't usually get a chance to go back after five years, seven years, 40 years, even 100 years to see what's working and what isn't working on a home. We painters do—in fact, that's most of what we do: We come along and fix things that are failing, and we get to learn from that failure.

THE SOURCE OF MOST PROBLEMS

No coating lasts forever, especially on wood. Depending on the environment, you can expect a well-executed paint job to last somewhere between eight and 12 years. But often, paint begins to experience trouble long before that. And from what I've seen, that trouble is virtually never related to a flaw in the paint itself. Manufacturers have had years to perfect their formulas, and they do continual research and development. If you invest the dollars for good-quality paint, rather than buying the cheapest can on the shelf, you can expect excellent performance from the product.

When I see problems, they're usually not caused by the paint or stain. Most commonly, problems can be traced back to the way the house was built or maintained. Less frequently, the issues relate to how the substrates—the wood trim, siding, or window and door frames—were prepped for paint. And least commonly, the problem is with how the paint was applied. Prep and painting are the painting contractor's job. But what the carpenters do before the painters even show up at the site can make all the difference to the endurance of the coating.

Photos by Ted Cushman and Clay DeKorne

Unprimed siding won't hold paint for long. This paint job on a new addition **(4)** is less than five years old. Factory-installed primer is better than no primer, but it won't block the bleed-through of extractive oils in cedar **(5)**. An additional coat of acrylic primer is needed before the finish coat. All field cuts need to be primed before installation of all siding and trim **(6)**.

These days, most of my company's painting projects are likely to involve some carpentry as well. I now have a few well-rounded carpenters on my own payroll, and they sometimes spend days replacing siding and trim, or even remodeling a porch, before my prep crew starts work. So the tips here aren't just kibitzing—they're what our own carpentry crew needs to do in the field. If your carpenters do the same things on the next house you build or remodel, they'll be helping to give the paint or stain a fighting chance.

TIPS FOR TROUBLE-FREE PAINT

Use preprimed material. The minute you put wood up on a wall, the sun starts to attack its fibers, and the wood begins to experience swelling and shrinking as it gains and loses moisture to adjust to the surrounding air. To protect the wood, every piece of siding or trim that is nailed to a building should be primed first on six sides—that is, on all four faces and on both ends.

If you use unprimed material, you should prime it yourself before you nail it up. That includes priming the back face. Although it doesn't face the weather, the back of a board is often attacked by moisture coming from within the house. Back-primed wood can resist that moisture, but wood that hasn't been primed on the back will curl or cup. That unbalanced movement stresses the nailed connections, and moisture migrating toward the outdoors also attacks the bond between the coating and the wood, causing early peeling or wear.

Don't over-rely on the factory primer. A factory-installed primer stabilizes the wood during shipping and storage, and it provides temporary protection when siding, trim, or windows are first installed. But it's not usually intended to be the primer for the material in service. That's why the label on a new window or door will often warn you that the unit should be primed again before it's painted. With those components, and also with preprimed clapboards and trim, we always reprep the surface and apply a field primer before we apply the finish coating of stain or paint.

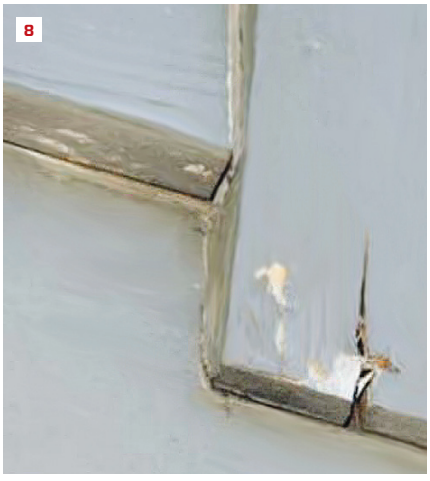
In fact, even if wood is installed and primed, but then sits for an extended period before the finish coating is applied, it may need to be washed or even sanded again and primed again. Primer is not supposed to serve as a finish coat; it is supposed to help the finish coat bond. And if it weathers before the finish coat goes on, you can't count on it to do even that.

The one exception is factory-primed wood shingles. Many companies now apply both a permanent primer and a durable top coat to shingles, under ideal factory conditions and with controlled drying and curing. That's the best coating a wood shingle or shake can get—better than any field-applied coating. If you're going to use wood shingles, I'd advise you to go that route.

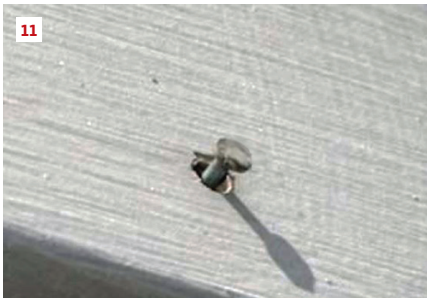
Field-prime all cut ends. Whether you use factory-primed material or prime it yourself, make sure to prime every cut end or edge. That's easy to do—just keep a can of primer and a brush at the chop-saw station and have the carpenter who's doing the cutting prime each end before he passes it to the carpenter who's nailing.

If you don't prime the cut ends, you're leaving open the part of the wood that is most open to moisture entering: the end grain. Nature intended wood to draw water into the end grain. In service, unprimed ends will absorb water and swell, and paint will start to come off the wood at that location first. If painters arrive to paint or stain a house that is sided with clapboards whose cut ends are unprimed, or trimmed out with boards whose ends are unprimed, there is very little they can do to address the issue. So it's up to the people installing that wood to make sure that the ends are primed.

Understand limits of finger-jointed material. Many wood windows and doors are now assembled with finger-jointed wood. We also see a lot of finger-jointed siding and trim. If the wood has a factory primer applied, it may hide those joints, but it doesn't protect them from the weather. So it's important to prime finger-jointed material again as soon as possible after installing it. If



Here, carpenters have installed factory-primed window casing without sealing the ends. Failure has begun at unprimed ends **(7)**, and in one case, water absorbed into an unprimed end has caused the wood to check **(8)**. Not all of the failure is due to the carpenters, however. Stain was applied without any sanding or a second coat of primer, causing the finish to fail **(9)**.



Water will collect and seep into the wood around an overdriven nail **(10)**. Over time, smooth-shank nails will work their way proud of the surface **(11)** as siding changes in moisture content and temperature. Nails like this should be replaced with stainless steel, ring-shank nails.

those joints start to open up and let moisture in, they may not hold up the way they're supposed to, and they'll start to look bad as well.

Some finger-jointed material uses very small pieces of wood that don't match between one section and the next. Pieces with different grain density and grain orientation move in different ways, and they also accept paint or stain in different ways. If you use this kind of material, you should make sure your customer can accept the way it looks; coatings on sections with flat grain will wear or come loose sooner, and the joints and variations may quickly become apparent to the eye. While the material may be economical, the results may not be to everyone's liking.

Use the right nails. When siding and trim are nailed with smooth-shank nails—even galvanized nails—daily and seasonal wood movement can work the nails loose from the material over time, leaving them standing proud. On repaint jobs, our prep crew usually has to pull a lot of nails that are high, and we always replace them with ring-shank nails (either hot-dipped galvanized or stainless steel). There's no good reason for a carpenter in new construction not to use ring-shank nails in the first place. I've never found a ring-shank nail that has worked its way high of the siding or trim.

Be careful to drive nails just flush with the top surface of the wood, or perhaps a hair lower. Good carpenters develop a feel for how to set the nails just right with the final tap of the hammer. But gun nails are harder to control, and carpenters may get in the habit of driving the nail heads into the wood. That's bad practice—it provides a place for water to pool and attack end grain, and it creates a surface condition that is hard for primer to seal.

Keep joints tight. Open miters and wide gaps between siding or trim boards typically are caulked by the painter. But a caulk joint will not last more than a few years, and as it breaks down, the finish will, too. Paint lasts much longer when backed by primed wood.

PAINTER'S PURVIEW

There's a lot more to say about a durable paint job. Good surface prep and skilled application of the right coatings are critical. If you choose a well-qualified painting contractor, they'll likely be done properly. Just as important are the priming and nailing techniques I've described here; they could add years to the lifetime of the coating the painter applies.

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