Exterior Trim That Lasts

by Jim Tolpin

Done right, exterior trim can last a long time. I've seen 17th and 18th century homes in New England whose original moldings — everything from cornices to watertables — were still solid after centuries of exposure to the elements. But done wrong, exterior trim will be one of the first parts of a house to go. While working on contemporary homes on the West Coast, I've encountered 10-year-old window casings and porch railings that needed repair or total replacement.

Why do some trim jobs last while others don't? Unfortunately, there's no simple answer or single solution. Instead, I've found it best to pursue a combination of strategies. These include using rot-resistant woods and designing joints and surfaces to shed water.

Choosing Rot-Resistant Woods

Since the end of the last century, the first choice for exterior trim has been the naturally rot-resistant woods of America's Northwest. These include redwood, red cedar, Alaskan yellow cedar, and Port Orford cedar, all of which may last a century or more without protection. In addition to their durability, these woods are easy to work, take a crisp profile when routed, and fasten and paint well. Their innate drawback is softness — they tend to dent quite easily.

The use of these species brings other problems, as well. The dust and oils found in redwood and cedar are relatively toxic to those of us who must cut and sand the stuff. I, for one, break out in a rash if I so much as touch a piece of roughsawn redwood (gloves and a dust mask are musts). And because these woods are cut from a dwindling stock of old-growth trees, their cost has shot up in the last few years, pricing them out of all but the most high-end jobs.

Fortunately, there are good alternatives to these old-growth woods. Depending on what part of the country you live in, you may be able to get high-quality cypress, white oak, or locust at reasonable prices. These species offer nearly the same rot-resistance as redwood, and they are harder and more dent-resistant.

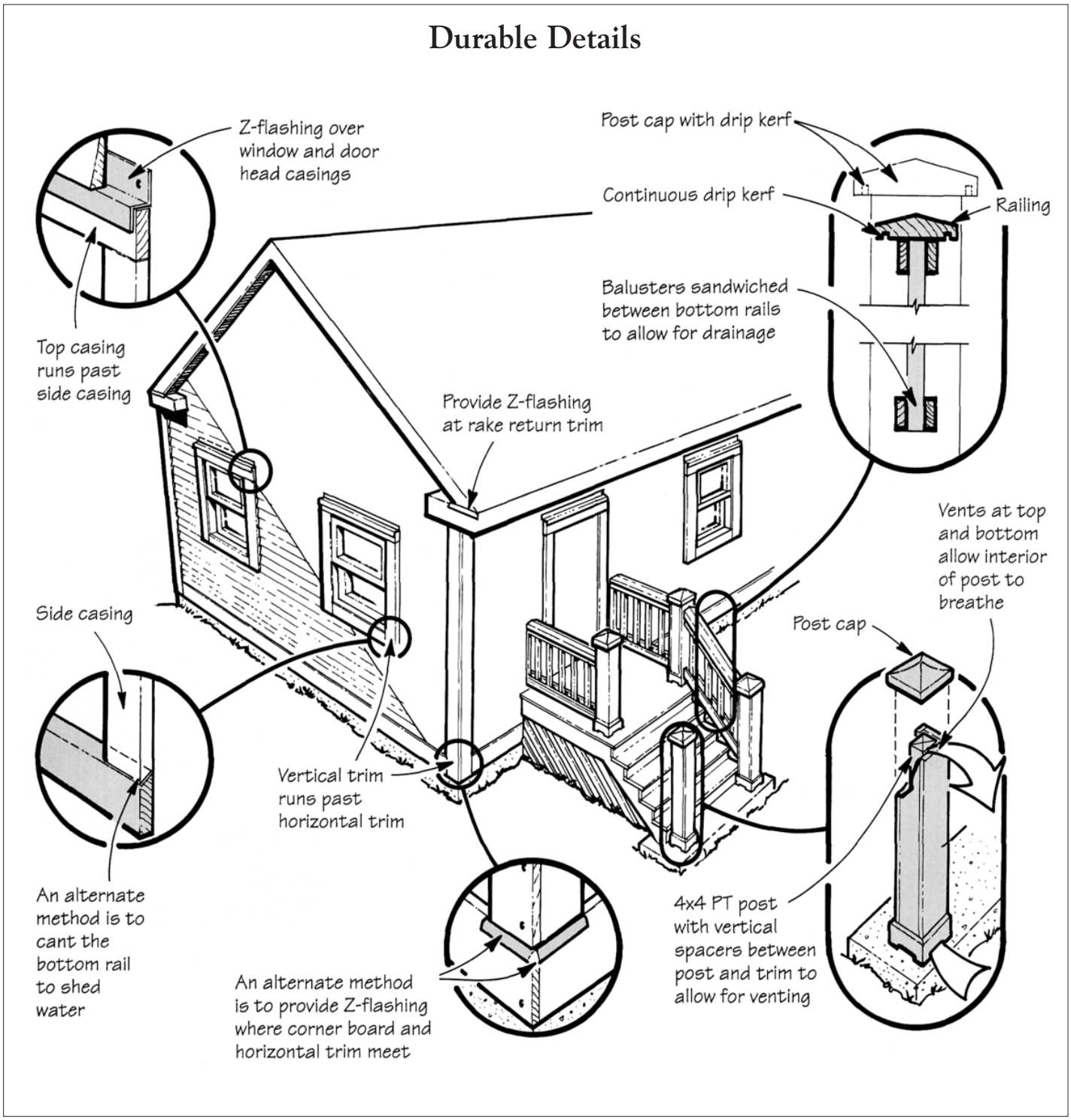
A step down the ladder are woods classified by the U.S. Forest Products Laboratory (FPL) as "moderately" rot-resistant. They include eastern white pine, southern longleaf pine, larch, and swamp oak. In my experience, these woods last for many years if they are installed properly and well-protected with paint — though in more questionable installations they are not as forgiving as either redwood or cedar.

For a durable trim job, use joints that shed water and apply a good finish

The FPL's "slightly or nonresistant" hit list includes alder, poplar, cottonwood, hemlock, the spruces, the maples, red oak, and all other pines and true firs. Unless you can guarantee that no water ever reaches the raw wood of these species — at least without a way of quickly drying off — you shouldn't use them for exterior trim.

Regardless of species, you should avoid any board containing sapwood. This lighter-colored layer of wood lies between the heartwood and the bark, and carries sugar-saturated water up the trunk of the tree. As far as hungry bugs are concerned, using sapwood for trim is like using gingerbread for shingles. Also stay away from boards with splits, surface cracks, or loose knots. These almost always get worse with exposure to the elements, providing safe harbors and nurseries for bugs and fungi.

Finally, try to use exterior wood with a moisture content (as read by an electronic moisture meter) that's stable with the outside environment. In most parts of the United States, this falls between 15% and 20%, though it may be lower in the Southwest desert. One way to achieve this is to use wood that has been thoroughly air dried. Don't use any board that still contains sap (it's



The author uses several techniques to make exterior trim shed water. These include canting the top edge of horizontal boards, routing drip grooves on the underside of railings, and avoiding exposed end grain wherever possible.

too wet), or that has been kiln dried and stored inside (it's probably too dry).

Designing Good Details

Exterior joints should be designed to shed water (see illustration). Trapped water will cause excessive wood movement, splitting, and — ultimately — rot, bugs, and fungal infestations. For instance, where a vertical casing stile meets a horizontal rail at its base, I either run the stile past the rail or bevel the rail's top edge. I also arrange vertical trim pieces so that there's no exposed end grain, which is the part of the board that's most likely to absorb moisture. That's why I cap the same stile at its top edge by another rail.

It's also why I avoid miter joints in exterior trim work. When a miter joint inevitably opens as the wood shrinks, the end grain of both boards will be exposed to the weather. Dadoed tenons and lap joints can be made to work outdoors, if they're made according to the same principles. I also use metal flashing wherever possible to help water find a path away from horizontal trim pieces.

Railings, thresholds, and other flat surfaces can be made to shed water by bowing or sloping their top surfaces and sawing or routing a drip groove along their undersides. An example is the

Using the Right Finish

Left unprotected, exterior wood may deteriorate and fail in just a few years time. But the service life of nearly any wood can be extended if it's protected beneath a properly applied and maintained exterior coating system.

For exterior doors and other surfaces where I want the natural wood to show, I apply five to seven coats of a gloss varnish with UV filters, like Captain's Varnish #1015 by Woolsey/Z-Spar (36 Pine St., Rockaway, NJ 07866; 800/221-4466) or Man 'O War by McCloskes Co. (1191 S. Wheeling Rd., Wheeling, IL 60090; 800/345-4530). For exterior trim, I use three to four coats of a premium-grade latex or oil-based paint. (In my experience — and in accelerated tests — penetrating oils, sealers, and stains don't last very long.)

In general, the thicker and glossier the coating, the longer it will last. The thickness acts as a water seal, while the gloss reflects infrared and ultraviolet radiation, both of which break down the wood surface and decrease its ability to grasp a coating. All other things being equal, the lighter the color, the more it will reflect, and the longer the paint will last.

Preparation is Crucial

Remember also that the quality of any finish is only as good as the quality of the prep job. The wood must be clean — free of oil smudges and dirt stains — while nail holes, knotholes, and other defects should be filled with a high-quality filler. A good one is Trowel Cement from Interlux Yacht Finishes (2270 Morris Ave., Union, NJ 07083; 908/686-1300).

Before any paint goes on, sand the wood with at least a 120-grit sandpaper. Never, by the way, use steel wool for cleaning or smoothing: the particles left behind in the wood pores will rust and ruin the finish. If the finish manufacturer says to use a primer of some kind, do so. I personally don't use a special primer with varnish; instead, I simply thin the first coat half-and-half with turpentine.

When applying the finish, follow the manufacturer's recommendations concerning temperature and humidity. If possible, don't paint during excessively hot, bright days; the paint may dry so fast that it won't flow out. High humidity is another problem; on a damp day, moisture in the surface of the wood may get trapped beneath the paint, making it more likely to peel later on. Be sure to stop early enough in the day so that the finish will at least surface-harden before the evening dew settles.

Other tips for a first-class job include stirring rather than shaking the can to prevent bubbles from forming in the finish film, straining the finish through a cheesecloth filter into a clean bucket to remove lumps, sanding between coats to increase the adhesion between layers, and wiping away sanding dust and airborne dirt before applying each new coat (don't be too fussy here; you need only wipe the trim with a clean rag). It's also important to use good-quality brushes and rollers. A good brush will last a long time if cleaned well, will hold more paint without dripping, will spread the paint more evently, and won't lose hairs in the finish. The best brushes for oil paint and varnish are natural bristle ("china hog hair") with flagged rather than tapered ends. Polyester or nylon polyester brushes are best for latex paint.

Proper Maintenance

Even the best coating applied in the most careful manner will eventually fail. But if it's caught in time, a failed finish need not lead to the demise of the underlying wood. The secret is to carefully inspect the coating and the caulked joints each year, looking for cracks and abrasion, and renewing the coat and the caulk where necessary. With varnish you should sand off and reapply the top coat every one to two years. Most paints need sanding and recoating every five to ten years. If this commitment is kept up, it's possible for the underlying wood to last indefinitely.

—*J.T.*

built-up post in the illustration . I've cut the top cap in sloped facets and routed a drip groove on the underside. Drain and ventilation holes at the top and bottom of the post keep condensation from accumulating inside.

Assembly Techniques

One way to keep a joint dry is to make it as tight as possible — and to make sure it stays that way. Having worked on wooden boats, where joints get heavy abuse, I've learned a number of tricks for meeting this challenge.

The first is to make sure that adjoining surfaces meet uniformly at all points; no amount of glue or fasteners can compensate for a sloppy joint. The second is to apply a "luting" compound to any joint that's likely to absorb water, as where a window casing meets a sill. A luting compound is anything put between two boards to prevent water intrusion. Nineteenth century boatbuilders used pine tar and Irish felt, but nearly anything put on a raw joint surface to seal it before assembly will extend its life. A simple coat of latex paint or a wax-based sealant like Thompson's Water Seal has proven longevity. If you want a stronger joint, try an epoxy or a resorcinol or urea formaldehyde glue like Weldwood's Resin Glue. However, the latter two compounds get brittle after a time, so they may eventually crack and invite moisture into the joint.

To fill unflashed cracks between trim boards and siding, I use any of the standard butyl or silicone-based caulks. Even the most expensive grades rarely promise to last more than 25 years, though, so I don't spend my money on the best. Instead, I expect that my caulk beads will be inspected and replaced where necessary when the trim is repainted.

While boatbuilders use bronze or stainless-steel pins, bolts, or screws to hold joints together, I've found that galvanized fasteners hold up for decades if the coating isn't chipped. Note that not all galvanized fasteners are created equal. I suggest using only the hot-dipped variety — it has a much thicker coating than the electroplated type. ■

Jim Tolpin is a woodworker and journalist in Port Townsend, Wash.