

The Original Restoration Magazine

Old House

JOURNAL

On the House

Making **Metal** Roofs

Buying **Slate** Pretenders

Shutter Do's and Don'ts

Are **Stains** for You?

Plus:

Sears Houses

5 Wood **Fillers**

Garden **Cannas**

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The Facts on

BY THE OHJ TECHNICAL STAFF **W**hether you're trying to resuscitate a porch floor that's gone code blue from rot or need to camouflage the tiniest nail hole, you'll eventually find yourself puzzling over the hardware store's display of wood fillers.

It's a good place to start. As with checking nutritional data in the grocery store, you can learn a lot by reading labels. For instance, just as you can't get your minimum daily requirement of vitamins from a box of jelly doughnuts, you won't be able to invisibly patch a fine mahogany mantel with a super-strength filler that is difficult to sand and impossible to stain.

In-store research may not be enough to help make your final selection, however. On the job it becomes even clearer that no product is right for every project. In this article we take a closer look at several broad categories of fillers sold for wood and what they can and can't do when it comes to old-house projects.



Above: When dogs left deep gouges in this door and chewed out half a moulding, epoxy filler came to the rescue. The filler adhered well to the broad, thin gouges and could be built up, then sanded, to re-create the moulding. **Right:** Invisible patches under paint require "feather-edging" by sanding *into* the filler. **Opposite:** To rebuild screw holes, fill the area with a strong filler, let it harden, then rebore or reposition the hole.



Fillers

Picking putty for
woodwork
projects

Noncommercial Fillers

Traditionally, carpenters and woodworkers made their own fillers, and this is still a viable practice. It's easy to make your own filler with fine sawdust from the same wood as your project, mixing it into a paste with carpenter's white or yellow glue, shellac, or hide glue. Shellac and hide glue fillers sand better than the carpenter's glue mixes, and hide glue stains best. When the filler is dry, sand and seal with a coat of shellac or diluted hide glue, depending on which you have used.

Glazing putty—a mix of linseed oil and chalk or ground limestone used to set window glass—has a long history as an exterior wood filler under paint. Conservators at George Washington's Mount Vernon used linseed oil putty to fill cracks in the mansion's cupola—according to analysis, the same type of filler used for the last repairs some 55 years ago. Glazing putty is also good for filling and protecting set nails in clap-

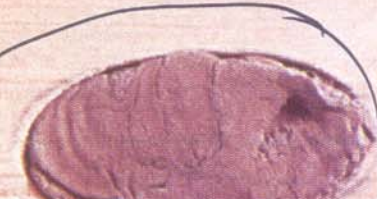
boards and window trim.

Modern day building and object conservators often custom-blend their own epoxy fillers by combining premixed resin and hardener with dry filler, such as phenolic microballoons. Specific products are marketed for the conservation or boat-building industry, but the methods are not complicated (see "Making Epoxy Fillers" OHJ July/August 1999).

Cellulose Based

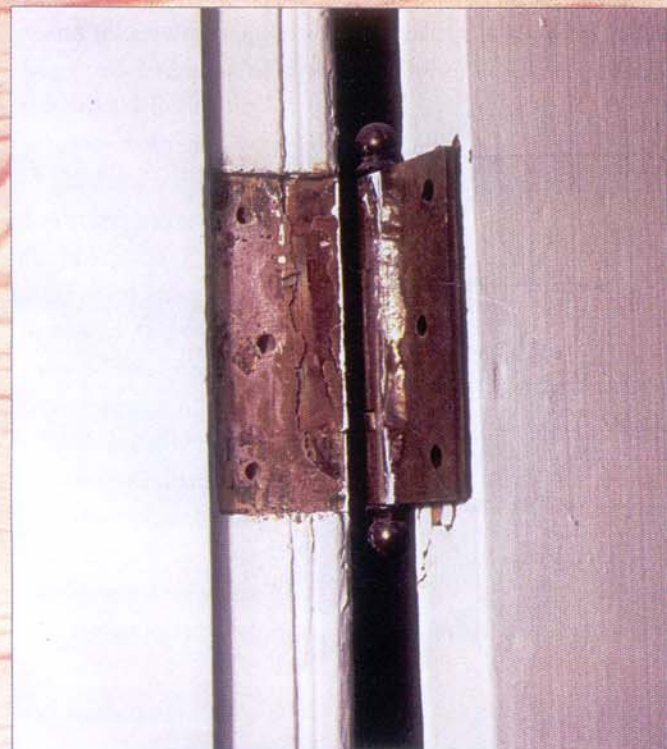
A class of products that has been around for a long time, cellulose-based fillers are combinations of wood fiber and binder that come in three general types: 1) dry formulas that need to be mixed with water by the user; 2) solvent types that are premixed with ketones and petroleum distillates; 3) water-soluble premixes.

Dry formulas are popular because they're inexpensive, have a long shelf life, and you can mix as little or as much as



Right: Fillers from top down: DAP vinyl spackling, Bondo epoxy, Minwax Wood Putty in colonial maple and red mahogany, Color Putty in butternut, Minwax Wood Putty in cherry and walnut, and Famowood Professional Wood Filler in oak.

INSET PHOTOS GORDON BOCK



Tips for Hiding Patches

If you need to match a stain, test the product beforehand on a piece of scrap wood the same color as your project. The degree to which "stainable" wood fillers absorb color varies greatly.

Product labels will tell you if you can use water-based stains (all fillers seem to work with oil-based stains) and whether you should stain the filler before or after you apply it. Makers of prestained fillers may recommend that you mix two or more of their

products to attain your desired hue, others suggest using stain to vary the color.

For example, we followed label directions to add stain (in this case red mahogany) to two cellulose products, DAP Plastic Wood ready mixed in a tube and Savogran, a dry filler. We then used them to fill holes on a board stained with one coat of red mahogany and not pre-conditioned for stain (which you should do on a real project to get a more even coat). The Plastic Wood took

on the desired color quickly, while the Savogran at first showed through as a somewhat mealy gray. The next morning, however, the latter was a nice, solid color actually a shade darker than we might have liked.

Elmer's sells an interior/exterior Carpenter's Wood Filler and also offers Fill 'N' Finish in light and dark shades for interiors only. Stained after the fillers dried, as recommended, the dark filler was by far a better match (see page 61).

you need. While solvent types have the advantage of quick drying time, they also dry in the can unless you seal it airtight after use. Labels may recommend adding solvent to keep them workable, and cleaning up with acetone. These petroleum-based mixtures are flammable and emit vapors that may cause dizziness and headaches. Water-based products are odorless and clean up with water before they dry.

Both solvent and water-based fillers are sold in tubes as well as cans. The tubes, while containing only small quantities, make the filler easy to apply without a putty knife or other tool (especially in long, narrow cracks) and don't dry out as readily in their containers.

Cellulose products tend to be rather coarsely porous so they don't all sand as smooth as wood, but some stain amazingly well. The newest ones look like their venerable cellulose cousins, but the wood fiber or powder they contain has been modified with chemicals to give them some advantages. Bob Hammond, category director for Minwax, says the company's new Stainable Wood Filler was developed to meet a demand for a filler guaranteed to color well with either oil- and water-based stains. Although older water-based fillers were unsuitable for use on exteriors or in damp environments, newer formulations like Minwax Stainable and Famowood's water-based

filler are said to stand up to outdoor applications if given a protective finish.

Gypsum Based

Another old standby, these mineral powders are mixed with water to form a crystalline filler that doesn't shrink or pull away from the edges of the filled area. Conservators sometimes use Polyfilla, a gypsum-based product that also contains some cellulose (not to be confused with an English vinyl product of the same brand name). It can be difficult to use since, rather than shrinking, it actually expands as it dries. This means it adheres tightly to wood but can pop out as wood undergoes seasonal expansion, says Gardiner Hallock, restoration manager at Mount Vernon. Use gypsum-based fillers

only where you intend to paint, since manufacturers make no claims about stainability, and only indoors, since these materials will absorb water and spall off the surface.

Vinyl Based

Most of these products are calcium carbonate (chalk) mixed with a polyvinylacetate dispersion or emulsion as the vehicle or binder. As lightweight and fluffy as marshmallow crème (though without the sticky texture), they're easy to handle, and clean up with water. While they quickly dry to the touch, this can be deceptive. Hallock advises using them only for thin coats (1/4" or less) because thicker coats can crack as the solvent continues to fully dry, which can take months. These fillers are probably best used for small repairs to plaster or plaster board, but they also work on wood that will be painted. They won't take stain, however, and tend to "ghost" (leaving a white residue around the filled area), shrink considerably, and sand to a rough, porous surface.

Epoxies

Most of us are familiar with these two-part, petroleum-based resin products, either as adhesives or wood consolidants. When this technology is adapted and combined with other materials, the result is an exceptionally strong and durable wood filler. Epoxy fillers by nature require thoroughly mixing two components in accurate (often equal)

proportions so that they will harden properly through a chemical reaction. The resin-hardening process typically takes several hours. Epoxy fillers won't take stain, but they can be sawn, nailed, and sanded—even sculpted before the filler sets hard. Because they bond tenaciously to wood and resist moisture, epoxies are the fillers of choice for exterior features that

Suppliers

ABATRON

Wood consolidants and epoxy fillers
(800) 445-1754
www.abatron.com
Circle 42 on resource card.

H. BEHLEN & BRO.

Filler, paste-wood filler
(866) 785-7781
www.hbehlen.com
Circle 43 on resource card.

DAP

Dry, premixed, and vinyl fillers
(888) 327-8477
www.dap.com
Circle 44 on resource card.

FAMOWOOD

Wide range of filler products
(800) 767-4667
Circle 45 on resource card.

MINWAX

Stainable and prestained fillers, epoxy fillers
(800) 523-9299
www.minwax.com
Circle 46 on resource card.

WOOD CARE SYSTEMS

Liquid Timbr epoxy
(800) 827-3480
www.woodcaresystems.com
Circle 47 on resource card.

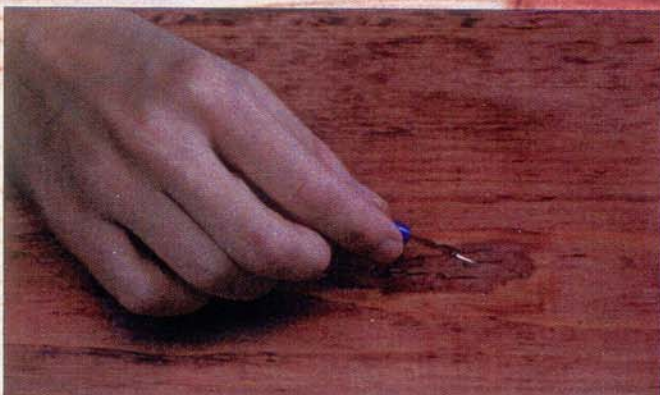
will be painted. When built up in layers, they can even be used to essentially reconstitute huge chunks of missing wood in windows, porches, and other weather-beaten areas. Available in large quantities via mail order, they're becoming more accessible in small amounts in hardware stores.

Cosmetic Fillers

Oil-based Crayons and Colored Fillers

These nonhardening fillers are for tiny dings and nail holes. They don't shrink and come in a rainbow of wood colors, so that when you can find a reasonable match they're a snap to use. Those in cans will dry out but the crayons, like the ones we used in kindergarten, go on forever.

For large indentations, most fillers work best if they're applied in several layers, allowing each layer time to dry. Drying time until products are ready to sand (top) can range from 15 minutes to overnight. Check label directions for staining. We've given our damaged area an irregular edge (center) to make it less visible. The patch will blend in even better if you can give it some faux graining with a small, sharp tool (bottom). On the display board to the right are four unstained fillers, first unstained, then immediately below, colored with red mahogany stain. From the top, DAP Plastic Wood, Savogran dry filler, Elmer's Fill 'N' Finish for dark woods, and Elmer's Carpenter's Wood Filler.



Pastes

Also called pore fillers or floor putty, these have a consistency similar to paste floor wax. Furniture makers use them to give open-grained woods like oak a smooth surface; try them when refinishing a floor. (They are applicable primarily to horizontal surfaces.) Some people use a color different from the wood to make the grain stand out. They come as either oil- or water-based. Oil is difficult to stain once applied (although you can tint it before you apply it or look for a prestained product). If you've sanded down to bright wood chose a clear or neutral water-based paste. Then you can stain it within a day (before it's fully cured) with an alcohol-based stain. 🐿

GORDON PHOTO



PHOTOS THESE PAGES: DAVID SHARPE