

# Repairing Drywall

Techniques for fixing everything from popped screws to big holes

BY MYRON R. FERGUSON



**C**racks or holes in drywall, wet or stained drywall, peeling joint tape, popped nails or screws. Any of these problems means a dreaded drywall repair is inevitable. I know that some people grimace when faced with a chore like fixing a hole in drywall. The framing never seems to be in the right place for attaching a patch, and the quarter-inch layer of joint compound used to fix it looks nearly as obvious as the gaping black hole, except now they have drywall dust all over the furniture and a wall to repaint.

Unlike most people in my business, I love walking into a drywall-repair job. I savor the look on a customer's face when

I say: "Sure, no problem. I can fix this in no time." The more severe the damage, the more gratifying the look. Over the past 17 years, I must have faced every possible type of drywall repair, and I have gotten good not only at patching holes but also at permanently concealing repairs and doing them as quickly and easily as possible. □

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## CRACKS SHOULD BE CUT OPEN AND FILLED

Cracks in drywall are usually caused by structural movement, such as the settling that happens in new homes. Most often, the cracks occur on a seam, but sometimes they can be found in the middle of panels over doorways or windows. (In modular homes, cracks in the middle of panels can occur as a result of transportation and placement on a foundation.) In new construction, I recommend waiting at least six months before repairing cracks to give the structure time to settle.

Most cracks go completely through the panel, so just repairing the surface is not

enough. The first step, as in all repairs, is to remove any loose material with a putty knife or utility knife. I then cut a V-groove along the crack, opening it up about 1/2 in. and going almost completely through the panel to the paper on the back. I fill the void with joint compound (for more about choosing joint compound, see sidebar p. 67) and cover it with mesh or paper tape. Then I smooth the area with two or three coats of joint compound, blending it into the surrounding area and lightly sanding after the last coat. I'm careful to let the joint compound dry between coats.



**Chip away loose material** and cut a V-shaped groove along length of crack.



**Fill groove with joint compound** and apply self-adhering tape over the crack.



**Apply three thin coats** of compound, feathering it into the rest of the wall.

## POPPED SCREWS ARE THE MOST COMMON PROBLEM

Popped screws or nails are the easiest to fix. Nails and screws rear their heads when the drywall panel is not firmly fastened against the framing, when the framing shrinks or twists, or when the wall or ceiling is struck or moved slightly during remodeling work.

Whatever the cause of the pop, the best remedy is to refasten the panel near the popped nail or screw. I usually press on the panel next to the popped fastener and drive a screw into the stud about 1 1/2 in. away (sometimes on both sides), drawing the panel toward the framing. I remove the popped fastener or drive it back into the framing.

Covering the dimples is easy. If the paper surface of the drywall has not been damaged, just fill the depression with three thin coats of joint compound, letting the compound dry between coats, followed by light sanding with



**Refasten drywall** to underlying framing near the popped nail or screw.

150-grit sandpaper. If the paper has torn or if the core of the drywall is damaged, it's best to remove all loose material, fill the hole with joint compound and then cover the area with fiberglass-mesh tape. (You can use paper tape, but I prefer self-adhering mesh tape.) This approach also works for any hole 2 in. wide or less.



**Three thin coats of compound** fill dimples, but use tape if surface is damaged.



## PATCHING AN OLD ELECTRICAL-BOX OPENING

When an outlet or switch is eliminated, the box may be removed or left in the wall. If the box is left behind, make sure there are no live electrical wires in it. (Wired boxes should not be covered with drywall; they should be closed with a cover plate and remain accessible.)

I start by beveling the outside edges of the hole with a utility knife to a 45° chamfer all around. Next, I cut a drywall patch the same size as the beveled opening, and I bevel back the edges to fit the hole.

I adjust the fit of the patch with a utility knife until it fits snugly into place. It works best when the patch sinks below the wall plane, leaving room for a thin layer of joint compound. I spread a generous layer of joint compound onto the edges of the opening (or the patch) and press the patch into place. Then I cover the seams with mesh or paper tape, and two or three coats of compound. Sand after the last coat.



**Bevel edges of the wall opening**, then cut a matching piece and bevel its edges.



**Add joint compound** to the opening or the patch, then press patch into place.



## REPAIRING WATER-DAMAGED CEILINGS

A water leak usually runs along the top of the drywall until it finds a seam or a corner, often loosening the tape and joint compound to create an exit. The damage to the drywall itself is usually not extensive because the water doesn't sit for too long.

Seams, however, usually need some work. Once the leak has been repaired, I remove loose tape and joint compound. If the drywall has come loose, I can

**After masking surrounding areas**, remove any loose drywall and joint tape.

**Stain-blocking primer** will prevent water stains from bleeding through repairs.





**Cover seams** with mesh or paper tape, followed by three coats of compound.

usually refasten it to the framing with drywall screws. Next, I cover the seams with paper or mesh tape and apply two or three coats of joint compound.

Drywall saturated with water may come loose and sag. It will have to dry thoroughly before it can be reattached. The sagging areas will be difficult to reattach when dry because the drywall can take on a new shape. I can sometimes fix sags before the drywall dries out by supporting it with a T-support or temporary furring strips fastened to the framing. It's also a good idea to remove and dry out any wet insulation.

**Apply compound to seams;** use paper tape and three coats of compound.



## All joint compound is not the same

There are two broad categories of compound—drying and setting. Within each of those categories, there are different mixes available that dry faster or slower, softer or harder, depending on your needs.

### DRYING-TYPE COMPOUND

Most drying-type compounds are premixed and ready to use right out of the bucket. There are different types. Taping compound is used to embed the joint tape for the first coat and to fill for the second coat. It is strong and doesn't shrink much. Topping compound is a lighter-weight compound that is used for the thin finishing coat. It feathers out nicely, dries quickly and sands smooth. All-purpose compound can be used for all stages. It's available in most lumber or hardware stores. For small repairs, if you don't want to buy more than one bucket, use a topping or all-purpose mix.

Whatever you choose, all drying-type compounds require an application temperature of at least 55°F (this condition applies to surface, compound and air temperatures). The compound must dry thoroughly between coats, and drying times are affected by temperature, humidity and airflow.

### SETTING-TYPE COMPOUND

While drying-type compounds cure as water evaporates, setting-type compounds harden by chemical reaction. Setting times vary from 20 minutes to six hours, depending on the type used. Because these compounds harden chemically, humidity and cooler temperatures have little effect on setting time.

Setting-type compounds are great for quick repairs, but they can be difficult to sand. I like to use a lightweight setting compound for the first two coats before finishing with an all-purpose (or a topping) drying-type compound.

The big drawback of setting-type compounds, however, is the inconvenience of mixing them yourself. On the plus side, you can mix only what you need and store the rest dry. For all but the smallest batches, I mix the compound in a 5-gal. drywall bucket, using a mixing paddle attachment with a ½-in. electric drill. With setting-type compounds, additives can be mixed into the batch to accelerate the drying time even more.

—M. R. F.



**Setting-type compounds,** which harden quickly, are great for repair work.



## LARGE PATCHES ARE SECURED WITH FURRING STRIPS

When people have to repair large holes that fall between wall studs or ceiling joists, they often cut the drywall back to the framing to create a spot for fastening the patch. The problem is that the repair becomes much larger.

I try to keep the repair as small as possible by not attaching the patch to the framing whenever the damage is between studs. For round or square openings (such as those created when a light fixture is removed), the patch can be measured and

cut to fit precisely. For odd-shaped holes, I simply cut a patch slightly larger than the damaged area, hold it over the hole and trace around it with a pencil; then I cut out the damaged area to match it.

To add strength to the repair, I use furring strips to hold the patch. I cut the 1x2 strips about 6 in. longer than the hole and slide each strip into the opening, fastening it on both ends with drywall screws. The patch is fastened to the furring strips with drywall screws, making it a firm part of the

drywall panel and flush with the surface. This method makes the patch easy to conceal and unlikely to crack or loosen.

To tape the patch, first fill any large gaps with joint compound, and then cover all the edges with mesh or paper tape.

### ON-LINE CONNECTION

Check out a video clip of repairing drywall on our Web site at [finehomebuilding.com](http://finehomebuilding.com).



**Make a square or rectangular patch** slightly larger than the damaged area.



**Hold the patch** over the damaged area and trace its outline onto the wall.



**With a drywall saw**, cut along the pencil line, then test the patch until it fits.



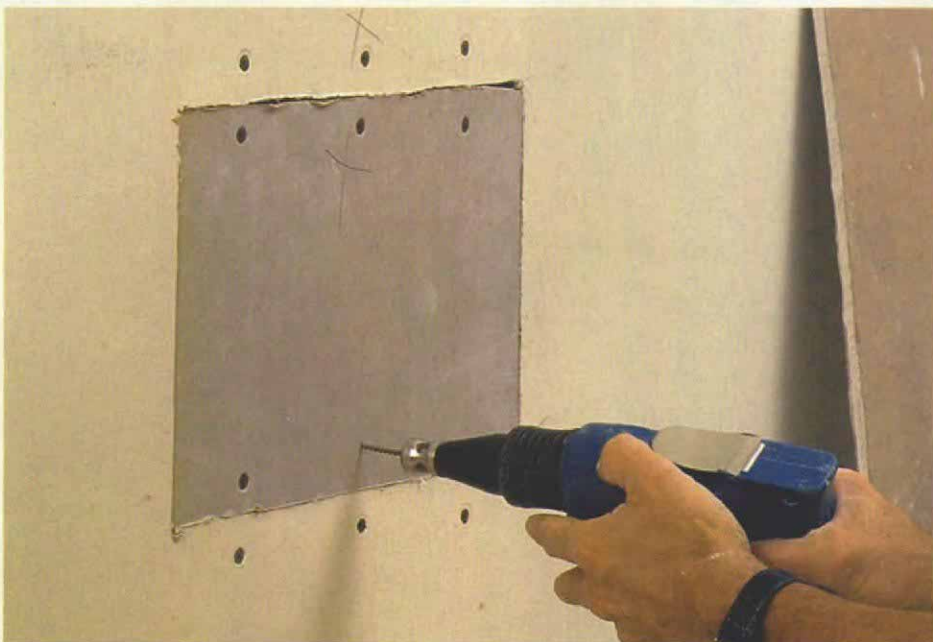
**Furring strips** of 1x2 material will strengthen the repair considerably. Strips should be 6 in. longer than the opening and fastened at both ends with drywall screws.

Because paper tape is stronger than mesh tape, I recommend it for larger, more difficult repairs and those that are attached directly to wall framing. Cover the tape and patch with three thin layers of joint compound, making sure to feather out the edges properly and not to build up the patched areas too much.

Repairs that span wall framing can be a real test because of the large surface area they involve. I start by removing the damaged area with a utility saw, cutting to

the wall framing. (For cuts perpendicular to framing, I first mark an outline so that the patch area will have square corners.)

Because I cut along the inside of the framing, I have to attach 1x2 furring strips or 2x4s to studs for fastening the patch. I make sure that the strips are flush with or slightly back from the back edge of the drywall surface. If possible, I use one piece of drywall for the repair. I leave about a 1/8-in. gap to avoid damaging the edges of the patch.



**With furring in place, the patch can be attached with drywall screws.**

**Spread a thin layer of compound over the seams and apply mesh or paper tape.**



## Making a drywall patch disappear

The final step in all drywall repairs is to coat the patch with at least three (and sometimes four) layers of joint compound—letting each coat dry in between—followed by a light sanding. No matter how carefully I patch a section of wall, the tape and joint compound form a high spot or bump. A poorly feathered patch can be as noticeable as the damage it was meant to conceal.

The key to avoiding an unsightly high spot is spreading and feathering the layers of joint compound over a large area and avoiding building up excess joint compound on any high areas. I like to begin each coat by applying a liberal amount of compound to the entire area and then feathering the outside edges first, working the compound smoothly toward the thin layer left in the center. The first coat covering the tape should be as thin as possible while hiding the tape.

After the first coat of compound is dry, I use my trowel as a straightedge to see how far the high spot projects from the plane of the wall. The bigger and more noticeable the hump, the more area I will need to cover with joint compound to feather it into the rest of the wall. (For small patches, I just rub my hand over the repair to feel how well the high spot is disappearing with each coat.)

The second coat is a filler coat; I fill in any voids, feathering the outside edges while keeping the compound very thin on any high spots. When the second coat is dry, I check the high spot again (by hand or by trowel) and apply more compound to widen the area further and to fill in voids or unfeathered edges. This third coat of joint compound increases the diameter of the patched area even more. Depending on the size of the repair, each coat will feather out 6 in. to 12 in. from the previous coat.

—M. R. F.