

Plaster Repair Strategies

Minimize demolition by patching cracks, resurfacing with fabric, or adding a layer of drywall



by Tom O'Brien

I love the look and feel of old plaster, so when the inevitable cracks and crumbles appear, my goal is to preserve as much as possible. But I'm not a purist. Unless I'm working on a historically significant house, I rely on modern methods and materials to make efficient and invisible repairs. Materials and techniques vary depending on the degree of damage and its location.

Plaster Repair Strategies

1. Prep Work

I start every plaster repair job by identifying all of the damaged spots and circling them with a pencil. Then I prep the area by cutting open each crack and flaring the edges. Intact plaster is tough stuff, so it's easy to know when and where to stop cutting. When the demo is done, I vacuum the debris from the crevice, then apply firm hand pressure to the surrounding plaster, checking for sponginess (an indication that the keys have broken and the plaster has separated from the lath).



SLICE AND FLARE

Slice open each plaster crack with a utility knife, then flare the edges with a 5-in-1 tool to increase the bonding surface area. Because this process takes a toll on cutting tools, keep a small sharpening stone at hand to restore their edges.

3. Stabilizing Loose Cracks

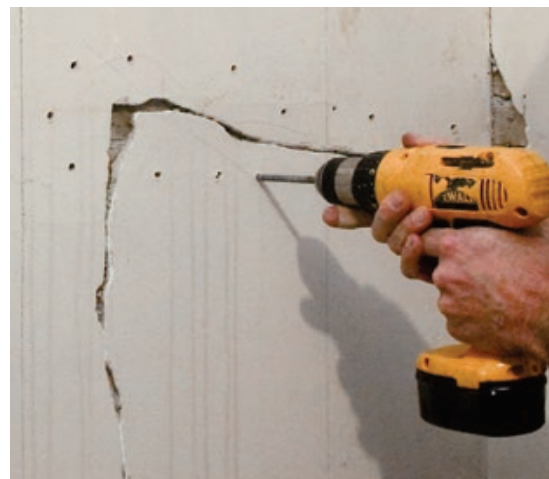
If the plaster surrounding a crack is loose but otherwise intact, it must be reattached to the lath and framing or the repair will be temporary at best. This can be achieved with mechanical fasteners, adhesives, or a combination of both.

Plaster washers. When used with drywall screws, these thin, perforated discs (Charles Street Supply Co., 800/382-4360, charlesstreetsupply.com) flatten under pressure, which draws the plaster tight to the substrate without causing new cracks. They're most effective when they can be driven into framing rather than lath alone. I predrill to avoid splitting lath, and because the washers tend to sit slightly proud of the surface, I countersink them (slightly) to avoid having to feather the joint compound to create a flush appearance.

If the wall still feels spongy after the plaster washers have been screwed to the studs, I add a few more, this time fastening to the lath alone. Securing plaster washers to lath can be tricky, because it's easy to split the thin, dry wood, so I again predrill carefully. I also countersink for the washers — but not with a spade bit, which would burrow through the lath and leave nothing for the screw to grab onto. Instead, I use a 1¼-inch carbide hole saw, which can be adjusted so the pilot doesn't bore into the wood.

Adhesive. Another option for securing spongy plaster is to use glue. I'm aware of one company that makes a proprietary system for regluing plaster to lath (Big Wally's Plaster Magic, 802/254-1330, plastermagic.com), but I've achieved good results by injecting standard construction adhesive.

This method requires applying pressure to the plaster to hold it tight against the lath while the adhesive cures. Sometimes the plaster washers provide all of the clamping needed. If the screws holding the washers have already been driven, back them out before injecting the adhesive, then tighten them up again. When plaster washers aren't enough, I'll use a sheet of ¾-inch plywood, covered in plastic, as a clamping surface. The plywood can be screwed to the studs or braced with 2x4s.



2. Filling Cracks in Solid Plaster

If the surface feels solid, the crack can be repaired with joint compound and tape. To fill the crack and set the tape, I use a setting-type joint compound — like Durabond 90 — which sets up hard but dries quickly, so it can be recoated the same day. For succeeding coats, I generally use all-purpose ready-mix joint compound because it's easy to sand smooth. But if I'm pressed for time, I'll mix up a sandable setting-type compound (such as Easy Sand 90), which is harder to polish but sets quickly. For repairs in highly-visible locations, I'll skim-coat the entire wall surface to make sure everything blends.



FILL AND TAPE

To repair a crack in solid plaster, first mist it with water to prevent the patching compound from drying out too quickly, then fill it with a setting-type joint compound. Cover the filled crack with fiberglass tape and skim it with another layer of compound, then wipe it clean with a drywall knife. Use ready-mix compound for finish coats.



USE PLASTER WASHERS

After locating solid framing either behind or alongside the path of the crack, drill $\frac{3}{32}$ -inch pilot holes about 2 inches away from the crack's edges. To countersink for the washers, use an expendable $\frac{1}{8}$ -inch spade bit to carve a shallow circle into the face of the plaster. It's important to leave the brown coat intact; otherwise the plaster will be too weak to withstand the pressure from the washer. Fastening with $2\frac{1}{2}$ -inch screws into the studs clamps the plaster under the washers. If the spaces between washers are still spongy, attach the washers to the lath with $1\frac{1}{4}$ -inch drywall screws.



INJECT ADHESIVE

Start by drilling a series of $\frac{1}{4}$ -inch holes every few inches, being careful to drill through the plaster without penetrating the lath. After vacuuming out the dust, squirt a little water into each of the holes, then inject the adhesive until it oozes out around the edges of the tip. Keep a damp rag nearby to wipe up the excess adhesive before it skins over. When plaster washers don't provide enough clamping pressure, fasten plastic-covered $\frac{3}{4}$ -inch plywood over the glued area until the adhesive has cured.

4. Applying a Drywall Patch

Often, water damage or some other localized trauma will render a small section of plaster beyond repair. In these cases, I replace the damaged plaster with a drywall patch. Plaster varies in thickness, so I keep scraps of 1/4-, 3/8-, and 1/2-inch drywall on hand to serve as patches.



PRY AND PATCH

To repair a small, severely damaged area, use a flat bar to pry off the loose, crumbling plaster, leaving the lath in place. Square off the edges with a knife and a straightedge, mark the stud locations, and fasten a drywall patch using 2-inch drywall screws. Where edges are fastened to lath alone, use construction adhesive and 1 1/4-inch drywall screws.

5. Covering Major Damage

Walls and ceilings that are riddled with cracks are seldom worth patching. But as long as the surface is reasonably flat (no excessive crumbling or sagging), I prefer to cover them — usually with drywall — rather than deal with the mess and expense of demolition.

Ceilings are easy. Regardless of the extent of damage, it's generally less work to apply a layer of 1/2-inch drywall than to patch and fill. Even if crown molding is in place, it's often easier to remove and reinstall it than it would be to tape and finish the corners. On most jobs the drywall goes directly over the plaster, but the project shown here was an old house that had never had overhead lighting. Rather than fish the wiring through an insulated attic floor, we decided to add 1-inch furring and run conduit in the space between.

Walls are more problematic. Because the drywall butts up against baseboards and casings, it diminishes their profiles and requires flat-taping to cover the joints. When I have to make major plaster repairs in bedrooms and other private spaces where the appearance of skinnier baseboards and casings won't be so noticeable, I use 1/4-inch drywall, remove the trim elements, and rabbet the edges to eliminate the need for tape whenever possible. In public spaces, I try to avoid this practice because it diminishes the rich shadow lines of antique moldings.

6. Using Fabric

I don't recommend wallpapering over cracked plaster, because the cracks always show through. But a proprietary system such as Nu-Wal (Specification Chemicals, 800/247-3932, spec-chem.com), which combines a fiberglass mat with an acrylic binder, is almost as easy to apply. This approach has two advantages: The mat is less than 1/16 inch thick, and you don't have to wait for multiple patching coats to dry. The one disadvantage is that significant cracks and bulges must be leveled out with joint compound or they will be noticeable. I like this type of system for closets, where I don't worry too much if the surfaces aren't perfectly smooth, and for prominent locations where I don't want to reduce the molding profiles or gut the wall.

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LAYER CEILINGS AND WALLS

For most ceilings, drywall can be applied directly over the plaster. On this job, the furring created a space to run conduit for overhead lighting. When covering plaster walls (photos below), use 1/4-inch drywall to minimize the effect on trim profiles. To ensure a permanent bond, use both constructive adhesive and screws to fasten the thinner material.



REINFORCE WITH FABRIC

The author used the Nu-Wal Plaster Restoration System to quickly stabilize cracked plaster in a closet without increasing the wall thickness. Installation involves applying an acrylic binder, smoothing on a fiberglass mat, and coating it with a top layer of binder. The slightly textured finish surface can be painted or the binder can be tinted beforehand.

