

BY TIM LEAHY

Make Old Walls Smooth and Sound

The historic mansions that my crew and I work on in Newport, R.I., are sometimes bankrolled by folks who can afford to restore them to their original glory. This means that we strip paint off hundreds of feet of woodwork and repair a lot of plaster walls. Last winter, we were hired to paint the interior of the Eisenhower House at Fort Adams State Park. Because the house is state-owned, the budget was tight. Lucky for us, the woodwork was in great condition, but the walls needed serious attention. Hairline cracks, poorly made patches, and large sections of peeling paint were evident in several rooms that needed to be painted. We made them new again with a technique I've used on many preservation projects.

After scraping loose paint and securing crumbling plaster, my crew and I covered the walls with wide fiberglass mesh, then applied two thin coats of joint compound. At about 35¢ per sq. ft. plus minimal labor, the results can't be beat. The walls are clean and smooth, and they won't crack again. Also, any potential lead hazards are now safely contained. While we typically use this approach on plaster walls, it works on drywall as well. Before we touched the fiberglass mesh or opened a bucket of mud, though, we inspected the walls to make sure they were sound.

Get it clean, dry, and dull

As time goes by, plaster succumbs to substrate movement, moisture, alterations, and



Cracks, peeling paint, and bad patches disappear with a wide roll of adhesive mesh and two thin coats of joint compound

COVER THE WALLS WITH MESH

repairs. On the surface, mildew, chalking, paint failure, and cracks were all easily visible. Before applying the mesh, we scraped and/or sanded any loose or flaking paint and leveled old patches and imperfections.

Deep cracks indicated structural movement, so I brought in one of our carpenters to assess the problem. He determined the cause and that it had been addressed long before we'd gotten there. At that point, my crew and I inspected the plaster more carefully, then stabilized loose areas.

We looked for paint that flaked off easily and for bulges in the surface, which indicate that the plaster keys had broken, releasing plaster from lath. When necessary, we used plaster washers (photo p. 63) and screws to tighten the wall back to the lath.

Some of the plaster flaked off in chunks. In these instances, we chipped away at the loose plaster until we reached an area where the keys were clearly intact. We then patched holes smaller than 8 in. dia. with setting-type compound, such as Durabond 45. Although we didn't need to patch anything larger than 8 in., I typically patch large areas with drywall. Setting compound can slump when applied over big areas, requiring multiple coats and sanding. It's best to attach the drywall directly to lath; cutting away lath undermines its strength around sound plaster keys.

We scraped away all flaking paint until we reached a place where it still adhered soundly to the wall. Because we were working in a home that predates the 1970s, we did all this with lead safety in mind. I suggest reading "Lead-Paint Safety, at Home and on the Job" (FHB #150 and online at FineHomebuilding.com) and visiting the EPA's Web site (www.epa.gov/oppt/lead) for guidance.

Once the walls were patched and sound, we vacuumed them to remove dust that would interfere with the adhesive on the mesh. We used trisodium phosphate (TSP) and a damp rag to clean areas that were chalky or had greasy residue.

Self-adhesive mesh adds strength

The fiberglass mesh we use comes in 3-ft.-wide by 75-ft.- or 150-ft.-long rolls. We apply it in vertical strips, overlapping each seam 1 in. to 2 in. Unrolling the fiberglass is easier if you approach it as a two-person job.

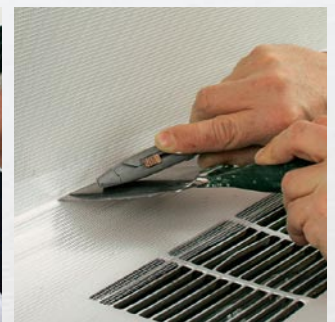
Peel, stick, and roll. Start each section by peeling several inches away from the roll, then pressing it against the wall. Let an inch or so run onto the ceiling. Keep the roll horizontal as it's unrolled to ensure that it stays in a straight line down the wall.



Unroll a few feet at a time. After a large section is adhered, unroll the mesh with two hands. Pull it tight as you go. Unroll, then smooth a few feet at a time. Make sure every inch is adhered.



Keep it smooth and straight. Use your hand to press and smooth the mesh onto the wall. Peel back the fabric, and reposition it as needed to remove wrinkles. Overlap each section by 1 in. to 2 in.



Trim to fit. Use a taping knife and a utility knife to trim the mesh around the casing, the baseboard, and the ceiling. Press the mesh into the joint, then trim it with the knife.

Overlap inside and outside corners



Lap, don't butt. Butting two pieces into an inside corner will result in cracks over time. Instead, run the mesh about 2 in. past the corner. Smooth it out to remove wrinkles, then go back and tuck it tight into the joint using a 6-in-1 tool or a taping knife.



Overlap, but give it room. Overlap the next piece, holding it back from the corner about ½ in. Keeping the overlapping edge away from the corner will ensure that it won't be snagged when joint compound is applied. Wrap outside corners the same way.

APPLY TWO THIN COATS OF COMPOUND



Use a side stroke. Using a 5-in. tapping knife, apply the compound to the wall with a side-to-side stroke. Be sure not to lift the mesh where it overlaps and where it has been trimmed.

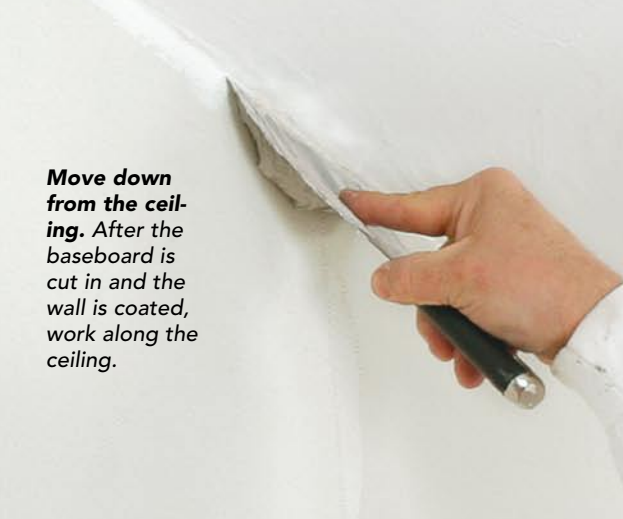


Scrape it off. Pull the compound off the wall. Keep the knife tight; the first coat should fill only the mesh. Cover the entire wall, keeping this first layer tight to the mesh. Let the first coat dry, then lightly sand and recoat in the same manner.

Work the room



Pull to cut in. Work inside corners horizontally from the inside out. Move in this fashion from the top down. Don't run the knife from top to bottom with one edge tight to the corner.

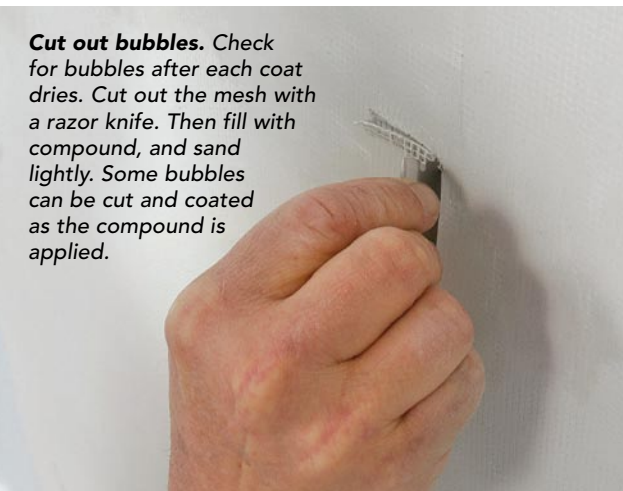


Move down from the ceiling. After the baseboard is cut in and the wall is coated, work along the ceiling.

BEFORE YOU PRIME, SAND THE HIGHS, AND FILL THE LOWS



Sand lightly. Allow the first coat to dry, then sand the entire surface with a fine-grit sanding sponge. Scrape down high edges first with a tapping knife. Repeat this process after the second coat has been applied and dries. Spot-coat areas where the mesh sits proud of the second coat.



Cut out bubbles. Check for bubbles after each coat dries. Cut out the mesh with a razor knife. Then fill with compound, and sand lightly. Some bubbles can be cut and coated as the compound is applied.

Use wide mesh and a narrow knife

Although covering walls with adhesive mesh and applying two thin coats of drywall compound take a little time, the process requires minimal sanding and costs only about 35¢ per sq. ft.



Plaster washers and screws

Reinforce plaster that has pulled away from lath with 1½-in. drywall screws and plaster washers (a 120-count container costs \$20; www.charlesstsupply.com).

All-purpose joint compound

Coat the mesh with two thin layers of all-purpose joint compound. Allow each layer to dry 24 hours before recoating and/or priming. A 5-gal. bucket of mud costs about \$11 at most home centers.



5-in. taping knife

Use a knife this size to apply the compound to a wall or ceiling. The work goes quickly. Wider knives curve in the center, so it's difficult to get a smooth, even layer.



Adhesive mesh

Apply 36-in.-wide adhesive fiberglass mesh over the entire wall to create a strong, unified substrate for the skim coats. The FibaTape Super-Crackstop (www.fibatape.com) used here costs about \$35 for a 75-ft. roll.



We started in one corner of the room and worked from the ceiling down to the baseboard. I like to run the mesh past inside and around outside corners by about an inch, then overlap the next section. Doing so makes for a stronger joint that is unlikely to crack. As with wallpaper, we let the mesh run long by about an inch at the ceiling and at the baseboard, then trimmed it later.

The key to rolling the mesh is to have about a foot well-adhered before trying to unroll large sections. This takes advantage of the adhesive's strength. Using an open palm, we smooth the fiberglass over the wall, working from the middle out to the edges. Every once in a while, it is necessary to peel a bit back and reposition it to keep it smooth and wrinkle-free. I find it easy to trim the mesh with a utility knife and a taping knife or wallpaper edging tool.

All-purpose compound does the trick

For the skim coat, we used USG's all-purpose joint compound because it is premixed and sands easily. To make the compound easier to apply, I mix it with a paddle mixer.

Although a wide taping knife might seem like the most logical tool for this job, it isn't. Wide taping knives have a bend in the center to help float taped joints. For this application, a perfectly flat knife is key. I've found that a 5-in. knife is a good choice. We applied the mud in a two-stroke fashion using a 5-in.

knife. The first coat should be only as thick as the mesh itself, so with the first stroke, we applied the mud to the wall. Then we scraped it off with the second. We also made sure to work the knife in the proper direction of any overlapped seams so that we didn't lift the mesh.

After allowing the first coat to dry overnight, we inspected the surface. We knocked off small nibs or ridges with a taping knife or with 120-grit sandpaper. We trimmed bubbles or wrinkles flush with a razor knife and filled them with compound.

We then applied another coat in the same fashion, again removing the excess compound to leave a tight, neat surface. Once the second coat was dry, we used a fine sanding sponge to smooth out minor imperfections. I didn't worry about areas where the mesh was slightly visible because the primer and paint would cover them. You also can use joint compound to spot-coat areas where the mesh sits proud of both coats.

Once the walls were well vacuumed, we applied an acrylic primer, then two coats of Benjamin Moore Regal wall paint. The wall profile and slight irregularities were not changed in this project, but the surface is as it used to be: even and smooth. □

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