

Patching Stucco

Tips for making durable repairs that match existing color and texture

by Ron Webber

Like a fingerprint, every stucco texture is unique. As a result, it's next to impossible to patch stucco so that the new texture blends perfectly with the existing stucco. But after doing thousands of jobs and experimenting with dozens of alternatives, I've come up with some tips that will help you get close when you have to match new stucco to old.

Repairing Cracks and Holes

There are two kinds of stucco cracks: shrinkage and structural. Shrinkage cracks are caused by excess water in the stucco mix. Like a dry lake bed, stucco shrinks into itself, and the number of shrinkage cracks will depend upon the amount of water in the mix.

Structural cracks are caused by a direct transfer of stress from the building to the stucco membrane. These stresses result from movement of structural members caused by warping, shrinkage, expansion, or unequal settlement. Earthquakes, high winds, and rainwater penetration can also contribute to stucco cracking. Structural cracking tends to be directional, following the planes of great-



est stress, such as along plywood seams or along a cupped rim joist.

Hairline cracks. It's best not to attempt to patch hairline cracks, because the repair may be more noticeable than the defect. If you do attempt a repair, I recommend you simply "dust" with stucco (see Figure 1). Using a dry 1-inch brush, dab dry stucco powder from a cup or bucket into the crack. When you've completed dusting, immediately brush off the excess from the edges; otherwise, a snake-like buildup will be visible on the wall. Alternatively, you can run a strip of masking tape along either side of the crack, dab in the dry mix, then pull off the tape. In either case, moisture from the night air will set the cement.

Small cracks. If the crack is larger, say 1/8- to 1/4-inch wide, use a narrow chisel or large screwdriver to scrape or chip through the color and brown coats to expose the scratch coat. Then apply an acrylic bonding agent to strengthen



adhesion between the old and new materials. We use Omega Acrylic Bonder from Omega Stucco (see "Sources of Supply"), but all bonders seem to work about the same. Finally, we patch with stucco or CTS Cement's Rapid-Set Mortar Mix.

On even larger cracks or small broken-out sections, scrape through the brown coat, then lay on a base coat of acrylic fortified stucco or Rapid-Set Mortar Mix. Then press a 2-inch-wide self-adhesive fiberglass mesh tape over the cracked area, taking care to keep it slightly below the finished surface. When the base coat cures, apply a finish coat of stucco over the netting.

Holes. To repair small holes up to 3 inches across, first clean the hole of any loose material and wet the edges. Fill the hole with Rapid-Set Mortar Mix in one coat. Using a trowel turned on edge, rake off any excess so that the patch is flush with the surrounding wall. After the base hardens, apply the matching texture.



For holes larger than 3 inches, we use a hammer and cold chisel to carefully chip a tapered edge around the perimeter of the hole. Tapered edges offer more surface area and produce a better bond. A back-cut taper will also lock in the patch. In addition, we use wire lath to support the plaster. Try to nail the metal lath to adjacent studs, but if you can't, at least weave and tie it to the old lath.

With a large hole, the building paper behind the stucco is often broken as well. This "lath" paper is the structure's main defense against water intrusion. If it's broken, the waterproof barrier needs to be repaired before stucco is applied (Figure 2). We use 60-minute grade D building paper from Leatherback Industries, shingling or lapping it like siding with the existing lath paper. In wet locations, I caulk the new paper to the old using Black Jack, a neoprene caulk from Gibson-Homans.

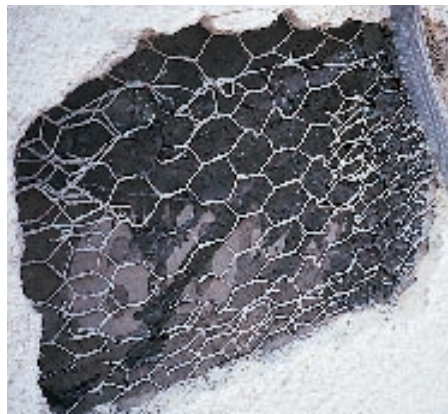


Figure 2. With a large hole, the building paper behind the wire lath is often ripped (left). After chipping a clean edge around the perimeter of the hole, repair the torn paper with new paper and caulk, then weave in new wire reinforcing (right). Where possible, fasten the wire lath to an adjacent stud.



Figure 1. To patch a small crack (1), first mask both sides of the crack with tape, and dab the crack lightly using dry stucco on a small brush (2). To avoid ridges in the patch, brush off the excess (3), then remove the masking tape and brush again (4). Overnight condensation will provide enough moisture to cure the dry stucco and complete the patch (5).

Tying to Existing Stucco

With a room addition or wall extension, you'll be faced with "tying in" the stucco from foundation to roofline. If you have a voice in deciding where the connection from old to new will occur, choose a corner or a doorway or window: The transition from old to new will be broken up and won't be as noticeable. If that's impossible, do your best to match color and texture, then fog coat the entire wall, both existing and new, to blend the two colors together. If the existing stucco has been painted, you most likely will have to paint the new stucco to match.

Old stucco can be very hard, so we usually cut it with a circular saw using a dry diamond blade. If you have to cut only a small section, you can use the head or claw of a framing hammer to punch a series of closely spaced holes in the stucco, then clean it up with a chisel. The diamond saw blade will cre-

ate a smooth vertical kerf, so you'll need to rough up the surface with a hammer to give the new stucco something to key to.

For a better connection between old and new, try to save the metal lath by sawing just halfway through the old stucco. Then hammer out the rest to expose the wire lath. If you snip the wire to repair the building paper, weave new wire lath into the old.

Peeling Color Coat

A stucco finish coat may not bond well to a smooth surface, such as concrete, or to a color coat that has been painted. A bonding agent will help the color coat adhere to paint, but you might need to sandblast concrete to get a good bond. If the problem is efflorescence under the peeling layer of stucco (Figure 3), scrape away the white powdery deposits, and clean the surface with a wire brush. Neutralize the surface before recoating by saturating the

whole area with a 50/50 solution of vinegar and water, then thoroughly flush with clean water.

Plastering

To patch with stucco (or what we call "plaster"), the first thing to do is to wet the surrounding area to prevent moisture from being sucked out too quickly, creating a weak bond between the old and new stucco. Next, apply an acrylic bonding agent to the existing surfaces with a brush or sprayer. Acrylic admixtures perform several functions besides improving adhesion between old and new stucco. For example, stucco colors will be 25% to 50% darker with an acrylic admixture. The color will also go on more evenly and be more stable. Acrylic added to fog will make it more paintlike. The fog will cover better and will help to seal the wall, as well as reduce the likelihood of efflorescence bleed-through. One caution, however: Acrylic patches on non-acrylic stucco will telegraph when the wall gets wet, showing a dry spot on the otherwise wet wall. You can test for the presence of acrylic in the existing stucco by sprinkling water on the wall — if it soaks the water up, there's no acrylic.

Stiff mix. To mix our stucco, we use one part Riverside Plastic Cement to three parts clean, high-quality sand that is free of excessive fines. Mix the plaster to a workable consistency, adding as little water as possible — the stiffer the better. Many plasterers prefer to make their own patch material using



Figure 3. Scrape away efflorescence deposits with a wire brush, then saturate the surface with a 1-to-1 mix of vinegar and water. Flush with clean water before patching.



Figure 4. When patching, wet the surrounding stucco and apply an acrylic bonding agent. To keep the patch from sagging and shrinking, work the new stucco against the edges of the hole and apply the stucco in layers no more than 1/2-inch thick (left). Screenshot the final layer even with the surrounding stucco (middle), and touch up with the edge of a hand trowel (right).

premixed stucco or cement and sand, then adding aluminite to accelerate curing. We often use Rapid-Set Mortar Mix, which sets up in about 20 minutes, because it achieves high strength and resists cracking.

When plastering, you should only build up about 1/2 inch of stucco at a time to prevent it from sagging, shrinking, and cracking (Figure 4). Often you'll have to apply several coats to build up to the proper thickness. Push the plaster well into the nooks and

crannies of the surrounding areas to achieve a good bond. On the final layer, screed the plaster even with the surrounding stucco. Once the stucco is dry, apply a texture coat (see "Matching Texture," below).

Fog Coat

For recoloring old stucco or tying in old stucco to new, we spray a light color coating called a fog coat. Fog consists of cement, color pigment, and lime, but with no sand. All the compa-

nies that sell stucco also sell premixed fog, and you have the best chance of matching the original color if you use the original stucco manufacturer's fog coat. When we don't know which brand of stucco was used, we use La Habra Stucco because it offers the widest variety of colors.

Although some people use fog as a substitute for paint, fog was designed to blend colors that dried blotchy. The fog coat is semitransparent, so it shouldn't be used to change the color of stucco.

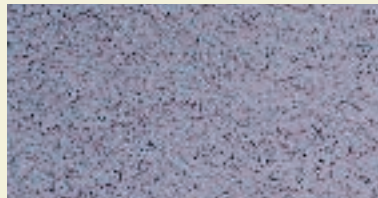
Matching Texture

To match the texture of existing stucco, we scrape down the area around the hole, then blend the new stucco from the patch outward. Duplicating the stroke the original plasterer used is an art and is the most difficult part of the job. It helps to study the shadows created by the texture and to try to visualize which direction the plasterer moved his hand. It even helps to try to figure out if the plasterer was left- or right-handed. You can practice your technique on the wall; if it doesn't match, simply scrape it off and try again. Here are some tricks on how to achieve common textures.



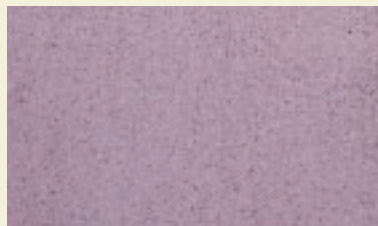
Sand float

After troweling on the stucco, use a sponge float in a swirling motion. It's okay to sprinkle additional water on the area as needed to roll the sand, but don't over-rub, or you will create a bald spot.



Fine lace

Use a small brush and lightly dab wet stucco on to the colored stucco base. Wait a moment for the excess water to dry out, then flatten the ridges by lightly running a clean trowel over the dabbled spots.



Smooth finish

Trowel on the finish stucco, smoothing as you go and continually working the material into the wet joint. To reduce small shrinkage cracks, it may be necessary to retrowel a second and third time, sprinkling water on the wall with a brush as needed to act as a lubricant for the trowel.



Figure 5. A fog coat can be brushed or rolled, but the author prefers to use a hand sprayer. Too much water will delay drying and darken the color, so use two thin coats instead of one thick coat, and feather the edges.

With an acrylic additive, however, fog will cover far better. You can fog over painted stucco or smooth concrete if you add an acrylic bonder to the fog coat prior to spraying.

Deciding on the color strength of the fog coat can be tricky, because over time the color will darken. We suggest buying darker colors and adding white to lighten the color.

Custom mix. A 12¹/₂-pound bag of fog takes about 5 gallons of water. The trick is to mix the fog into a thick paste, then let it set for about 15 minutes. Break the initial set by stirring, then add the rest of the water. Squeeze out any lumps by hand while wearing rubber gloves.

While the fog sets, prepare the job. Cover and mask the surrounding areas, get the sprayer out of truck, and re-mix the fog material in the bucket to break the set. Strain the fog twice through a paint strainer or nylon stocking, and pour it into a hand sprayer or bucket for application with a roller or brush. If you are using acrylic, add it to the fog coat just before application; if you add the acrylic too soon, it will be difficult to mix the fog.

Spraying. Less fog is better; so use two thin coats instead of one thick one, and blend or feather it into the surrounding areas. We usually spray the fog on (Figure 5), but it can also be rolled or brushed. Since spraying gives

us better control of the fog, we like to use a hand-pumped Chapin sprayer. Experiment on a small area first. Mix the fog continuously while spraying to avoid separation.

Curing the fog coat. Moisture content affects drying time, which affects color: The faster stucco dries, the lighter the color will be. Be careful on hot, windy days to keep the fog from “flash drying” or it will be chalky to the touch (see “Extreme Stucco,” 2/97). To keep the wall wet in hot weather, lightly mist the walls with water about 24 hours after applying the fog coat. Don’t use too much water, however, because thick scratch and brown coats will retain water and slow drying, which will cause the color to darken. Very light wetting of the fog coat will even up the color.

As the stucco ages, the color will tend to darken. For this reason, we use fog colors that are slightly lighter than the color we are trying to match and let it darken over time. Homeowners are usually skeptical of this, but it works. However, if you’re fogging or patching a stucco wall that is older than six months, you may have to add as much as 50% additional pigment to account for the darker color of the old stucco.



Ron Webber is president of *Prime Plastering Inc. in Norco, Calif.*

Sources of Supply

CTS Cement Manufacturing Co.
11065 Knott Ave., Suite A
Cypress, CA 90630
800/929-3030
Rapid-Set Mortar Mix

R. E. Chapin Manufacturing
700 Ellicott St.
Batavia, NY 14020
800/950-4458
Chapin sprayer

Gibson Homans Co.
1755 Enterprise Pkwy.
Twinsburg, OH 44087
800/433-7293
Black Jack neoprene caulk

La Habra Stucco
P.O. Box 3700
Anaheim, CA 92803
714/774-1186
Premixed fog-coat stucco

Leatherback Industries Inc.
111 Hillcrest Rd.
Hollister, CA 95023
408/636-5050
Building paper

Merlex Stucco
2911 Orange Olive Rd.
Orange, CA 92865
714/637-1700
Stucco products

Omega Stucco
2041 S. Susan St.
Santa Ana, CA 92704
714/935-0900
Omega acrylic bonder

Riverside Cement Co.
P.O. Box 4964
Diamond Bar, CA 91765
800/442-4910
Riverside plastic cement