MAKING
Old Stucco Look New

A pigmented top coat and foam-based moldings can transform a worn stucco exterior

by Don Thorvund

Here in Northern California, three-coat stucco is the dominant exterior finish material. It's been this way for years, so there's a lot of available work remodeling and repairing older stucco homes.

Many of our jobs involve repairing existing damage, adding cementitious window casings, and applying a new layer of color coat to all or part of the building. A lot of the stucco houses I work on were built in the '60s, when finned aluminum windows were the norm. Typically, there are no exterior door and window casings, and the stucco runs right up to the edge of the opening. These old single-glazed aluminum windows are not energy efficient, and after 30 or 40 years they're pretty worn out, so window replacement jobs are common in this area. Sometimes the contractor will tear out and replace the entire window, and sometimes he'll install a replacement unit inside the existing jamb. Replacing the entire unit always involves a certain amount of stucco

Figure 1. A color coat and casings were used to update the look of this 35-year-old house. If it weren't for the old roof, the home would look brand-new.

Figure 2. On this job, raw foam has been glued to the wall (left). It will be covered with fiberglass mesh and given a faux stone finish. It's faster to use precoated foam; the material shown in the photo at right arrived on site with the mesh and a cementitious coating already on it.

repair, which my company is often called in to do (see "Replacing Windows in Stucco Walls," 6/04).

When the replacement unit fits inside the existing jamb, no stucco is removed, so there's no need to patch around the opening. However, I may still land some work because the house looks dated without casings. If the existing stucco is in good shape, I can install new "stucco" casings right on top of the existing stucco.

Color Without Paint

Many older homes in this area have two-coat stucco, which consists of a scratch coat and a smooth float-finished brown coat. More often than not, these houses have been painted. The new owners may not like the color and texture, and the walls may have developed cracks. They could repaint, but that won't fix the texture or cracks. My company gets called in to repair the cracks and to change the color and texture by applying a layer of color coat.

Color coat is common in three-coat stucco jobs. It's what you get when you add pigment to the top coat of plaster. The color coat is about 1/8 inch thick and will last 20 to 40 years if properly applied.

Other homes in this area have three-coat stucco that has never been painted. There is a scratch coat, brown coat, and

Figure 3. The author creates faux limestone in his shop by applying a polymer-concrete coating to foam profiles (left). His crew cuts the trim in the field, glues it to the building, and mortars the joints. When complete, it's hard to distinguish from real stone (below).

some kind of finish coat. The finish coat could be plain white or a color coat. We're called in to repair cracks or because the owner wants to update the house by changing the color or texture of the walls (see Figure 1, previous page). It's a simple job to apply a second layer of color coat to an existing stucco building.

Even if the owner likes the existing texture and there are no cracks, adding a color coat is better than painting. Painted surfaces need to be maintained, and most paint jobs do not last as long as color coat. Because stucco is porous, some moisture may get past the stucco, hitting the building paper and draining to the weep screed at the bottom of the wall. Any moisture, whether it comes from inside or outside the building, will eventually evaporate through the surface. But when you paint stucco, it seals the surface — probably not well enough to keep any moisture from getting in, but certainly well enough to keep some of it from getting out. Sometimes the building may not retain enough moisture to cause problems. In other cases, though, it can be enough to pop the paint, rot the frame, or support mold growth.

Trim Material

Before the advent of aluminum windows, wooden doors and windows were installed fully cased, directly over the building paper and wire lath, and the plasterer stuccoed right up to them. Wooden casings were also popular in the 1970s, when they were often installed over the fin but on top of the paper and lath.

Wood casings are no longer common on stucco buildings. I work on a lot of projects in which wood casings have been removed because they had deteriorated or because water was leaking in

Figure 4. Though it looks like weathered stone, this casing is actually foam that was coated and textured in place. The faux limestone coating is much harder than color coat, so the trim is at least as impact-resistant as wood.

between the stucco and trim. It's our job to patch in around the windows and install new casings that won't leak or rot.

EPS foam. Standard procedure on new construction is to install trim and moldings on top of the brown coat but before the finish coat is applied. There are a number of ways to fabricate casing, but the most common method involves the use of an expanded polystyrene (EPS) foam planton. The foam is glued to the surface of the brown coat with a material that's similar to thinset mortar, then reinforced with a layer of fiberglass mesh tape and given some kind of cementitious top coat.

The trim can be finished to match the walls, or we can give it a different color and texture. In some cases we'll put a smooth finish on the walls and finish the casings to look like stone. Similar methods can be used to refurbish existing buildings. The biggest difference is the substrate: On new work you're going over the brown coat; on old work, you could be going over painted stucco, new brown-coat patches, or an existing finish coat.

Some people hear the word "foam" and immediately think about EIFS (exterior insulating and finishing systems). Foam-based trim is different because it's not part of the wall structure. There's at least 3/4 inch of stucco behind it, so the planton is a purely decorative piece. It's the building paper and flashings behind the stucco that keep water out of the building.

We use foam as the basis for casings, quoins, pilasters, columns, wall caps, and other decorative elements. The foam manufacturers use lasers to cut a wide variety of stock profiles, and it doesn't cost much more to get a custom shape.

The foam comes either raw or precoated (Figure 2, page 2). The raw material looks like plain white Styrofoam, while the precoated material is covered with a layer of fiberglass mesh and a coat of polymer-modified portland cement. The coating is about 1/8 inch thick, just enough to fill the mesh. Whenever possible, we buy precoated material because it saves us from having to apply the mesh and the first coat of cement.

Faux stone. On some high-end jobs, we take the raw foam profile to our shop and coat it several times with a mixture of ground limestone, portland cement, pigment, and liquid polymer additives. The coating is about 1/4 inch thick, and the finished pieces look like cut limestone (Figure 3, previous page). We use a miter saw with a dry-cut blade to cut our "stone" trim in the field. After the pieces are glued to the wall, we fill the joints with mortar the same way we would if we were tuck-pointing standard masonry. The finished casing looks like cut, mortared stone. We can also apply a version of our "stone" coating in the field. It goes over foam and can be finished in a variety of colors and textures (Figure 4).

Installing Casings

The foam casing material, even the precoated stuff, is soft enough to cut with a handsaw. The cuts do not have to be perfect because the joints will be taped and the surface will be coated a couple of times before the trim is done.

We glue the foam on with Foam Tite (Carson's Coatings, 209/745-2387), a polymer-modified portland cement. It's mixed and applied like a stiff batch of thinset mortar. We cut the trim, butter the back with Foam Tite, and glue it onto the wall (Figure 5). If it's new construction, we put the trim on the brown coat. If it's old work, we apply the trim to the existing finish coat. Trim should be installed only on clean, sound surfaces. You can put trim on a painted stucco wall, but you should apply a bonding agent first.

The foam adheres surprisingly well. I was once installing a long run of trim and someone bumped the transit while I was eating lunch. We set the trim to what we thought was a level

Figure 5. After cutting the precoated trim to length (top left), the plasterer applies Foam Tite to the back (top right) before pressing it onto the building (above).

Figure 6. Joints between pieces of trim are reinforced with fiberglass mesh (left). A layer of Foam Tite is then applied over the mesh to fill voids and bond the pieces together (below).

Figure 7. This sill and casing (right) have been glued to the wall and joined with mesh and Foam Tite. On this house, the trim will be the same color as the wall (below), but it could just as easily receive a different finish.

line, and it wasn't until the next day that we noticed it was off. The trim was harder to remove than you might imagine. We had to saw it off and use a grinder to remove the glue and remaining bits of foam.

We usually apply foam, then allow the adhesive to cure overnight. The trim will come off the wall while the Foam Tite is wet, but it's rock-solid once the adhesive cures.

The next day, we apply fiberglass mesh tape to the trim. The mesh reinforces the surface and holds everything together. Precoated trim is already covered with mesh, so we have to tape only the joints. With raw foam, we cover the entire piece and span the joints (Figure 6). If there's a big gap between the trim and the wall, we'll tape that joint too. After the mesh is in place, we go over it with a layer of Foam Tite. This fills in the weave and bonds the mesh to the trim. Once the adhesive sets, the wall and the individual pieces of trim are effectively a single unit (Figure 7).

Prepping the Walls

It goes without saying that the wall surfaces should be structurally sound. If there are holes or cracks, they have to be fixed first.

Cracks. We repair small cracks by

Figure 8. Color-coat stucco will readily adhere to an existing layer of the same material. This wall is being power-washed to remove dirt that would inhibit the bond.

spanning them with strips of fiberglass mesh tape and "painting" over them with a masonry bonding agent. There are many bonding agents on the market; we use a product called Multi-Bond (Carson's Coatings). It's somewhat flexible even after it dries, and it has a tenacious bond. If you put this stuff on a window, you could plaster over the glass and it would not come off.

This method is fine for repairing minor cracks that result from settling or earth tremors. It will not work on cracks that are caused by underlying structural problems. There's no point even thinking about stucco until the structural repairs are made.

A good bond. The walls should be clean before you apply color coat. We power-wash the wall with plain water to prepare it. It's possible to put color coat over previously painted stucco, but it requires extra prepwork.

When I first started plastering, there were subs who would sandblast the paint off existing stucco buildings. This produced an excellent substrate, but it was incredibly messy and posed an environmental hazard because of the old lead paint. Nowadays we use a power washer to clean the wall and knock off any loose paint (Figure 8). Once the wall is dry, we coat the entire

Figure 9. Painted stucco should be coated with a bonding agent before color coat is applied. This wall has never been painted, so bonding agent is not required, but the author's crew applied it anyway as a "belt and suspenders" measure.

Figure 10. This wall was coated with a bonding agent to equalize the suction between the existing color coat and areas that were patched when the windows were replaced.

Figure 11. Here the author creates a skip-trowel finish by applying a second layer of color coat over a partially cured layer of the same material.

surface with bonding agent. This ensures the color coat will stick, and it glues down any loose paint edges. It's not cheap: A five-gallon bucket of bonding agent costs about $100, plus there's the labor to put it on. We do it because it's better to spend a little extra on prep than to hear from a customer whose finish coat is peeling off in spots (Figure 9, previous page).

Uniformity. A color coat has no trouble adhering to a brown coat, Foam Tite, or an existing layer of color coat. Still, there are times when we will put bonding agent on these surfaces. One of the hardest things about applying color coat is controlling the actual color you get. If the substrate is not uniform, certain areas may cure darker or lighter than others. For example, the junction between existing stucco and a newer patch may show through the color coat because one area of wall has more suction (is more absorbent) than another. If you want uniform color, you need to apply the color coat to a uniform substrate. One way to even out suction is to coat the entire surface with bonding agent (Figure 10).

Color and Finish

The customers may know the color and texture they want, but unless they do stucco work, it's impossible for them to describe the finish. So I usually ask them to point out a nearby building that has the color or texture they want. I'll then make color and texture samples to try to reproduce it.

Texture. Many different textures can be created when the finish is applied. There are pebblelike dash finishes, smooth float finishes, and a variety of lightly or heavily textured trowel finishes. We try to produce the finish the client wants. I point out that heavily textured finishes will collect more dirt and grime than smooth ones, but that irregularities in the frame are less likely to show through a textured

finish.

When I started plastering, customers expected a very uniform finish, so that's what we strove to create. Nowadays it's popular to do a more irregular "old world" finish. Many of my customers want their homes to look like ancient Tuscan villas. It took me a while to become comfortable with this type of finish because it's against everything I learned as a young plasterer.

Color coat is usually applied with a trowel (Figure 11, previous page). Every plasterer has a slightly different "hand," so it's hard for two guys to produce identical texture. I try to have the same plasterer do all the color coat on any given wall. That way, any transitions will happen where the customer can't see them.

Finish Materials

A traditional finish coat is made from portland cement, hydrated lime, sand-sized aggregate, and various additives. We use LaHabra's Exterior Stucco Color Coat (714/778-2266; www.lahabrastucco.com). The only things we have to add to it are water and pigment, usually one box of pigment per bag of stucco. The finish material we use is available with either white or gray cement. We choose the type of cement based on the color we are trying to achieve.

It's very important to mix consistent batches of material. We always mix enough color coat to cover entire sections of wall. Adding a little bit more or less water can alter the color of the cured material. You don't want to run out of color coat in the middle of a wall because the next batch could be subtly different. This is less likely to show if you change batches at the natural break points in the wall (Figure 12).

Acrylic finish. Acrylic coatings can be used in place of traditional portland cement color coat. The acrylic products I use come premixed (including liquid

Figure 12. Each batch of the finish coat should be large enough to cover an entire section of wall. The wheelbarrow of colored material (left) will provide enough material to cover the uncoated wall to the left of the completed section in the photo below.

Figure 13. Cast-concrete trim is produced off site and delivered ready to install (above). It's very heavy, so it must be mechanically fastened to the wall; note the metal straps that extend from the edge of the pieces (right).

and pigment) in five-gallon buckets. The material is factory-mixed so the color is very even. It's also very flexible; it will span small cracks. The best thing about acrylic is that it's available in darker, more vivid colors than you can get with conventional color coat.

I don't push acrylic finish because, unlike traditional color coat, it is not permeable to moisture. It doesn't happen in every case, but I have seen buildings in which trapped interior moisture caused paint or acrylic coatings to pop off.

Durability Questions

One problem with conventional foam-based trim is that it's not very impact-resistant. The foam is soft, and since the color coat is not very hard, it doesn't take much force to dent the trim. It's a bad idea even to lean an extension ladder against windowsills and casings. There are certain subdivisions in this area that restrict the use of conventional color-coated foam. They might allow you to use it up high, but not down low where it's likely to get dinged. This problem is especially common around garage and entry doors.

One option is to use cast-concrete moldings (Figure 13). It's also possible to apply full, three-coat stucco over foam or wood blocking. The finished casing will be as thick and strong as the surrounding walls. This method was popular at the beginning of my career but died out in the 1980s because it was too labor-intensive to compete with EPS trim. The most cost-effective solution is to use foam but to coat it with a harder material such as faux stone.

If a client is concerned about damage, we'll typically use our faux stone product. We had a sample of our "stone" material tested, and it was impact-rated at 2,600 psi. It's not as tough as cast concrete, but it will stand up to just about anything short of a baseball bat or hammer.

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