SKIM-COAT PLASTER

by Sam Singer

Skim-coat plastering has replaced traditional plastering in the construction of most residential interior walls and ceilings. It's also making inroads among builders making the switch from tape-and-finish drywall. If you're unfamiliar with skim-coat plastering, also called veneer plastering, you're not alone. I work in southeastern Connecticut, where plastering is seldom seen in new construction. Yet just 20 miles east, in Rhode Island, skim-coat plaster is common.

Skim-coat is a thin layer of plaster applied over a special gypsum panel called blueboard. The paper facing is chemically treated to provide a bonding surface for plaster, and the blue color distinguishes it from regular gypsum board. After the board is hung, the entire surface is covered with an even coat of plaster, which is smoothed and polished. This process is significantly less expensive than wire lath plastering,

Veneer plaster provides a hard, smooth finish for walls and ceilings

but at an average cost of $1.10 to $1.30 per square foot, it's somewhat more expensive than joint-compound taping.

Advantages of Skim-Coat

In my opinion, skim-coat plaster resolves the shortcomings of drywall. Veneer plaster is monolithic, so there's no "tell" from the seams. Low-angle sunlight reveals all of the imperfections of drywall, but plaster has a smooth texture that looks good in any light. Besides, unless joint compound is skim-coated over the entire surface, the differences in texture between the paper and the joint compound tend to "read" through a gloss paint finish.

One coat of plaster veneer can double or triple the 1,000-psi compressive strength of a 1/2-inch gypsum panel. A two-coat plaster system can increase the strength to over 4,000 psi, making dents and nail pops highly unlikely.

Figure 1. The most commonly used veneer plasters in southern New England are USG's Diamond and Imperial, and Gold Bond's Uni-Kal. Basecoat plaster is used in two-coat veneer systems. Imperial contains a fine aggregate that increases its compressive strength, but makes it more difficult to work with.

Veneer plastering can be completed faster than drywall. An experienced plasterer can skim about 750 square feet of surface per day, and a typical crew can plaster a 2,000-square-foot house in two days. There is zero sanding, and the finished product can be painted as soon as 24 hours after the plaster application, depending on the room's temperature and humidity.

Plaster is more fire-retardant than exposed paper, and its denser surface is better at minimizing sound transmission. For these reasons, not to mention the dust-free application, my customers are willing to pay the moderately higher cost for skim-coat plaster.

Plaster Choices

We commonly use three kinds of veneer plaster in southern New England: United States Gypsum's (USG) Imperial, USG's Diamond, and Gold Bond's Uni-Kal (see Figure 1). The choice depends on the plasterer's preference and what the job calls for. For most jobs, I prefer to use Diamond plaster. I find Imperial to be the most difficult to work with and the hardest to get smooth, but it produces a very abrasion-resistant finish, with a reported 3,000-psi compressive strength.

Tools of the trade. I have invested thousands of dollars in tools for my remodeling business. But the tool I take the best care of is my $21, 13-inch Marshalltown stainless-steel plastering trowel. It's the one tool I never leave overnight at a job site, because a nick on any edge will render it useless. After three years of heavy use, it's broken in real nice and is my most valuable plastering tool.

Most plastering trowels are 5 inches wide and vary in length. In theory, I could be more productive with a 16-inch trowel, because it covers more surface per sweep, but I'm more comfortable with the 13-inch. I also have a 4x11-inch trowel for tight spaces. The edge of a trowel gets better over time as it tapers and thins from wear. A corner trowel, also called a butterfly, is used to make crisp 90-degree inside corners.

Besides a few good trowels, you also need hawks, stilts, staging, mixing containers, scoops, and a mixing table (Figure 2). The mixing table is a waist-high surface used to hand-mix traditional plasters. But since veneer plaster is machine-mixed in a container, the table is used solely to hold the batch for easy hawk loading. I find that a non-absorbent plastic laminate surface works well.

I use a *cage mixer*, which has a shearing action, to make my mixes more consistent. I purchased a masonry hammer drill to get the slow 900- to 1,000- rpm mixing speed specified on the bag. For small mixes (less than one bag), I use a plastic five-gallon bucket. For mixes of up to two bags, I use a recycled metal lube-oil can. I get the cans free at quick-lube garages and wipe out the residue. When working with other plasterers, I mix larger batches in 55-gallon containers. The wet plaster is heavy enough by itself, so I use a lightweight magnesium *hawk*. When working on stilts or staging, a helper, called a *tender*, will fill my hawk with plaster using a scoop made from a capped laundry detergent bottle with the bottom cut off.

Blister brushes — wads of felt on a wooden handle — are effective for removing blisters, or bumps, in the surface caused by overworking the plaster. A blister brush can also help get me out of trouble if a mix sets prematurely on the surface before I have a

Figure 2. Tools of the plastering trade include a hawk and assorted trowels, a felt blister brush, miscellaneous paint brushes, and a spray bottle. A cage mixer (right) chucked in a low-speed drill ensures a smooth batch of plaster.

chance to smooth it. The wet blister brush softens the surface just enough to permit smoothing.

Cleanup. I make tool cleaning easy by spraying a coat of WD-40 on the backside of my trowel, hawk, drill, mixer, and stilts before use. This keeps the plaster from sticking. A few quick swipes with a wet mason's brush gets the tools clean, and any plaster left to set on a tool can be dislodged easily later on.

Good light. Shining a bright halogen light on my plasterwork allows me to pick up imperfections that are easily missed under dim light. Years ago, I stayed past dusk to plaster one more wall under the low light of a couple of incandescent lamps. When I returned the following morning, the sun revealed small voids that weren't visible under low light. Now, whenever possible, I work while the sun is directly on the surface being plastered. Even at 1,000 watts, artificial light is no match for sunlight, so on an overcast day, I use my halogens and pay close attention to the surface.

Sizing Up the Job

At 50 to 80 pounds per bag dry weight, plaster is heavy stuff. I stage bags by room to avoid having to move them around as the work progresses. Coverage rates are published on the bag, but I've developed my own "feel" for area requirements. There's a maximum window of 30 minutes to apply the plaster and about 45 minutes to smooth it, so I plan the order of surfaces to cover and the size of each mix accordingly. Anything requiring extra time and attention must be considered: the number of inside and outside corners, obstacles like electrical wires that are hanging out for sconce lights, plumbing fittings, and places that are too small to get at with a standard trowel.

Surface prep. On plaster resurfacing jobs, when the wood trim is left in place, I tape the existing casings and baseboards. To protect the floors, I cover them with tarps or red rosin paper and roll paper over the egress paths to the cleaning station and bathroom facilities. In new construction, to make cleanup easy, I cover the subfloors and protect window and door jambs with masking tape.

For reinforcement, outside wall and soffit corners receive an expanded metal mesh bead attached with 5-penny galvanized box nails every 8 inches. I tape all of the seams and inside corners with self-sticking fiberglass mesh tape.

Before I mix any plaster, I run my trowel over the wall to detect any protruding screws or nails, and then sink or remove them. I also make sure that electrical wires are tucked into their boxes. If the box itself protrudes from the wall, it slows me down considerably, because I can only trowel up to it, not over it.

Getting the Right Mix

Nothing is worse than plastering with a bad mix. For consistently good mixes, I purchase my plaster from suppliers who rotate their stock often. In one lumberyard, I noticed the same pallet of plaster collecting dust for a couple of years. I wouldn't get near that stuff — its shelf life had long expired and

the chemical properties would have changed to the point that mixes would not set properly.

Before mixing, I make sure that the mixer, drill, and mixing container are free from dried plaster. If hardened chunks, known as "hitchhikers," dislodge into the mix, I'll have to pick each one off the wall with my finger.

Mixing. To mix a batch of plaster, I put cool, fresh water in the mixing container, then my tender quickly pours in the plaster with the mixer spinning (Figure 3). Stay away from extreme water temperatures, because icy cold water will cause fast setting, while hot water will cause the set to take much too long (the opposite of what you might expect). Manufacturers never give exact water-to-plaster ratios; for example, USG recommends 12 to 15 quarts of water per 50-pound bag of Diamond. Like a good chef, I've developed a feel for how much water and plaster to mix, so I never actually measure. I try to achieve a consistency that is something like soft-serve ice cream. To eliminate lumps, I mix Diamond for the manufacturer's maximum recommended time of five minutes. While mixing, I add water or plaster to get the consistency I like — just thick enough not to slide off my trowel when I hold it sideways. When I plaster over Gold Bond's Kal-Kore blueboard, I use a looser mix, because the board has stronger "suction" than USG's Imperial board. I've come to prefer the mixed-brand combination of Diamond plaster over Kal-Kore blueboard.

Figure 3. Plaster is highly alkaline, so it's a good idea to wear dust protection during mixing, the dustiest part of the job. Use cool, clean water for a predictable mix, avoiding temperature extremes, which affect setting time. A recycled lube container controls the splatter of a two-bag mixing operation.

Throwing on Plaster

First, I *scratch the seams*. The term "scratch" refers to a coat of plaster that is covered over by a finish coat. To scratch the taped seams, I apply a thin, tight coat of plaster and then fill in the outside metal corner beads. The scratched seams can be plastered with the very next mix. Seams that are scratched one day and plastered the next should be wetted just before plastering to keep the scratch from sucking the moisture out of the new plaster. I'm careful not to get the blueboard wet, because plaster doesn't stick very well to wet blueboard.

Troweling the field. After pouring the plaster onto the mixing table, I use my trowel to corral the plaster from the table onto my hawk, and move it to the center to keep it balanced. Using the trowel, I scoop the plaster off the hawk, tilting it slightly towards the trowel. I'm right-handed, so I start just above the floor at the left-most corner of the wall, spreading the plaster up and arcing to the right across my body, as far as I can comfortably reach. Then, without letting the trowel leave the wall, I press the plaster backward in a downward sweep with the opposite edge of the trowel. I finish with a light upsweep to erase the lagging trowel line (Figure 4). Joint-compound tapers apply mud in straight up-and-down or side-to-side motions, whereas plasterers always trowel in arcs. I keep my wrist stiff and put my whole body into the troweling motion. Each pass is the same up-down-up motion, erasing the lagging trowel line as I go. After I reach the planned stopping point, I get on the stilts and again go left to right, arcing downward across my body. With each pass, I carefully place the trowel into the ceiling-wall corner, pulling it down to blend it into the plaster below. I feather the wetter plaster above into the somewhat stiffer, setting plaster below, taking care not to press the trowel too hard into the surface. I don't want to "pull" the plaster and disturb the set. Before reloading the hawk, I clean the back edges of my trowel — every time.

Scratch and Double Back

The entire one-coat application is actually done in two steps, called *scratch* and *double back* (sometimes

referred to as *greasing*). The application just described is the scratch (not to be confused with the previous step, scratching the seams). Once I'm done with the scratch, I double back over the wall in the same way, adding more plaster from the same mix, filling in with lighter trowel loads. The goal is to achieve an even 3/32-inch-thick cover of plaster over the entire surface. The scratch and double-back steps should not be confused with a true two-coat system, which I'll describe briefly later. I always plaster the larger areas first, so the mix on the table gradually stiffens as I'm scratching and doubling back. Usually, if there's any mix left after doubling back, it will be too stiff to scratch-coat any more surface. However, once the mix stiffens to the consistency of hard ice cream, it's perfect for filling in corner beads.

Inside corners. I plaster inside corners in one of two ways. The first is to fill a wet corner when plastering adjacent surfaces. I'll run a corner trowel from top to bottom, or left to right, and finish with a short stroke from the opposite direction. The second method is to pull the corner on one side only, by placing a full trowel into the corner and pulling the plaster a short distance out across the surface. The adjacent side is left uncovered during that particular mix, and pulled separately later.

Smoothing. After the scratch and double back, the next step is smoothing. Using a pressurized water container, I spray on a fine mist and trowel it in to smooth the plaster and fill any voids. To achieve a crisp line on a pulled corner, I run a wet, angled sash brush lightly from top to bottom just before troweling. For a wet corner, I run a clean, wet butterfly down the seam.

Polishing. An hour or so after application, the plaster turns a light brown color, which indicates that it's ready for polishing. I polish with a dry trowel, pressing the trowel hard and nearly flat to the surface. Polishing gives the wall a satin-like finish. If, while I'm polishing, I notice any tiny voids, I spray the area with a light mist of water and trowel in a bit of ready-mix joint compound. It works like magic, no sanding required. During the day or two after "browning," the plaster lightens to a bright white.

Different Mix, Different Tricks

The process I just described is how I plaster using Diamond. For each plaster product, there are differences in the method: For instance, when plastering with Uni-Kal, I polish the surface by running a damp blister brush over it, followed by the trowel. This draws the finer plaster particles to the surface. Troweling drives them into the surface, producing a mirror-like finish (Figure 5, next page).

Figure 4. After scratching the panel seams, the author applies plaster in arcs, sweeping up to spread, down to embed, and back up to erase the trowel mark. The trowel never leaves the surface during application.

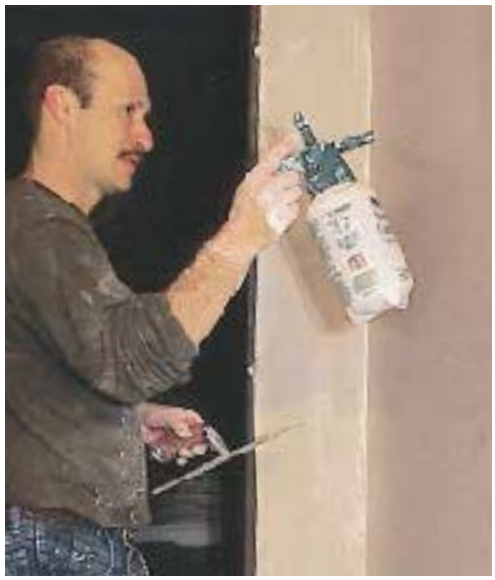

Figure 5. After the initial set, or "browning," the plaster can be polished, using water to bring up the fines and a trowel to burnish them into the surface. It's possible to achieve a mirror-like finish with this method.

Figure 6. For a two-coat veneer over old plaster or drywall surfaces, an orange-colored acrylic bonding agent provides surface grip for the gray coat. The author also coats the facing to restore the bond on blueboard faded from UV-exposure. A 42-inch "slicker" distributes the plaster base coat evenly, eliminating irregularities.

There are a few rules I set for myself, no matter what I'm plastering with. I apply the plaster mix "tight," firmly pressing it into the wall, thin and even. If it pulls with the trowel, I leave it alone so as not to refracture the plaster as it is setting. Refracturing disturbs the set, causing a longer wait before finishing. By applying plaster in thin coats, I never knock down high spots. I'm always adding, not taking away. This ensures that I never refracture the plaster. The less I run my trowel over the surface to get it right, the better the finished product, and the less fatigued I become.

Other Types of Plastering

I do a lot of resurfacing work and am often called on to repair crumbling and deteriorating plaster surfaces. Many of the homes in my area have old "horsehair" plaster over wooden lath, some more than 200 years old. If the old plaster is coming down in sheets, I remove it completely, along with the wood lath. This is the most expensive approach, because I usually have to sister in new framing, strap the ceiling joists using a laser for reference, and get everything straight before putting up the blueboard. If the old plaster is cracked but not loosened from the wood lath, I tape the cracks with self-stick fiberglass tape. Then I apply a water-based plaster-bonding agent, such as USG's Plaster Bonder, over the entire surface, and follow up with a two-coat plaster system. The plaster bonder, also called liquid lath, can be plastered over about an hour after application. I've used this process over stucco textures to make walls smooth for wallpaper. It's a good idea to apply a bonding agent to blueboard that has faded from exposure to ultraviolet light, and also before blending new veneer into existing sanded drywall or old plaster (Figure 6).

Two-coat systems employ a base coat, or *gray coat,* and are useful for refinishing irregular surfaces. The base coat is applied with the same scratch and double-back steps as the veneer plaster. When applying a two-coat veneer, however, there's no need to scratch the seams to get good results. The base coat has coarse aggregates, which should not be fine-smoothed, because they provide the "teeth" to hold the topcoat veneer. There are two special plastering tools that I use to straighten a base coat. One is a magnesium *darby*, a 36x5$^{1}/_{2}$-inch bar in the shape of a piece of beveled siding. The second is a magnesium *slicker*, a 42-inch-long tool similar to the darby, but a bit stiffer because it has a bent edge. I use either one to straighten the base coat once it starts to set, by scraping the tool edge over the entire surface.

Sam Singer *is a plasterer and finish carpenter working out of Uncasville, Conn.*