

Veneer Plaster

Jim Marshall makes drywall beautiful.

BY THOMAS BAKER PHOTOGRAPHS BY WILLIAM VAZQUEZ



Jim Marshall (below, on stilts) has been mixing, applying and patching plaster for more than 45 years. He first came to the attention of *This Old House* for his work on an 18th-century tavern converted to a private home. In 10 weeks, he and his son John troweled 25 tons of plaster over the tavern's original hand-split chestnut lath to re-create the look of colonial plaster.

Though widely used on today's walls and ceilings, drywall is subject to nail pops, telegraphing joints and abuse (you can scratch it with your fingernail). There is an alternative—veneer plastering—that marries plaster's hardness, fire resistance and texture with the convenience of drywall. Veneer plaster is skimmed over sheets of blueboard—a blue-tinted gypsum wallboard treated to accept plaster. Within an hour, the plaster hardens into a monolithic surface with a perfectly smooth finish.

To demonstrate the strength of his favorite product, plasterer Jim Marshall hammered a newly veneered wall with the edge of his trowel. Despite repeated blows, the surface showed nary a dent or scratch. "Try *that* with drywall," he challenged.



How to Plaster

An expert demonstration



After adding a tablespoon of retarder to 6 qts. of water, John Marshall blends 70 lbs. of an 80-lb. bag of basecoat plaster with a jiffler mixer attached to a 500-rpm drill. Mixing plaster is dusty, hence the mask. Glasses keep caustic materials out of eyes.

In about a minute, the batch reaches the consistency of grainy cake **batter**. Marshall stops mixing immediately; any longer can accelerate the set. With his trowel, he scoops plaster off the mixing board and onto his hawk, which holds plaster as he works.

Ceilings are plastered first, then walls. Joints and screws get an **initial coat**, then the blueboard's entire surface is covered with a layer of plaster about 1/8-inch thick. All tools are thoroughly **cleaned** with water between each batch.



Once the ceiling sets, **basecoat** plaster is troweled on the walls with a quick up-and-down rhythm. Holding the trowel at about 30 degrees to the blueboard gives a smooth, chatter-free surface, leveling undulating walls and creating perfect intersections.

After about an hour, the basecoat will have set. Then a **finish coat** made of lime putty mixed with gauging plaster is spread over the basecoat veneer. The corner trowel Marshall is using puts a neat crease down an inside corner.

This second veneer must be "packed" and polished with a trowel to make the **smooth**, hard surface we know as plaster. No sanding is needed. The wet felt brush in Marshall's left hand moistens the finish coat as he pulls the trowel at a low angle down the wall.

the materials

Clean water (1) and fresh plaster (2) are essential. "Look for the date on the bag," advises Marshall. "If it's more than six or eight months old, pass it by." He buys bags with the same date for consistency. Retarder (3) and accelerator (4) slow down or speed up the set. The jiffler mixer (5) and the low-speed drill (6) make quick work of mixing. Gauging plaster (7) and hydrated dolomitic lime (8) form the finish coat. Lime is caustic; cover skin, hands and eyes, and wear a dust mask when mixing.



the tools

Ninety percent of the time, the only tools a plasterer uses are a hawk (1) and steel trowel (2). The hawk holds the plaster and gives a convenient edge for scraping the trowel clean. The pipe trowel (3), tuck trowel (4) and margin trowel (5) are handy when space is tight. The point trowel (6) cleans up blobs at the edges of outlet boxes. The corner float (7) and corner trowel or "butterfly" (8) smooth inside corners. A felt brush (9) smooths surface imperfections. Nonetheless, Marshall says, "A plasterer's best tools are his arm and his eyes."



Plaster Tips

Checking for level: "Plaster's greatest asset is as a leveling device," Jim Marshall says. "You don't have to fuss with shimming out boards; the plasterer takes care of it." He uses 4- and 8-foot wooden straightedges to find dips in the blueboard, then circles those spots with pencil.

Working time: Heat, humidity and drafts speed the set, as will bits of plaster left over from a previous batch. That's why Marshall keeps the thermostat turned down and the windows shut and is fastidious about cleaning his tools and mixing board.

Troweling technique: Always work plaster "from wet areas into dry," Marshall recommends. For smoothing, the trowel is pressed down slightly at the front to "feed the plaster off the back." Hold trowel at a low angle (30 degrees or less); a 45-degree angle roughs up plaster, leaving "chatter marks."

Creating texture: Many of Marshall's clients ask him to leave a little roughness or irregularity in texture so visitors won't mistake his work for drywall. What he can't abide, however, is seeing his finely polished, perfectly smooth plaster surfaces painted with a thick-napped roller. "It leaves an orange-peel surface that looks like painted drywall," he says. Use a short-napped roller or, better yet, a brush, and "your walls will look like a piece of furniture."

Squaring corners: A straight, square corner is the mark of a good plaster job. In Marshall's hands, all it takes is a couple of swipes with the edge of his 3-foot slicker, a simple beveled cedar clapboard, followed by a clean cut with his corner trowel.

Patching Plaster



While it may be tempting to rip down an old plaster-over-lath wall and replace it with drywall, often the plaster can be saved. Firm plaster that has popped off lath can be reattached with plaster washers and drywall screws. Soft, crumbly plaster should be removed down to the lath and out as far as the firmly attached areas in preparation for patching.

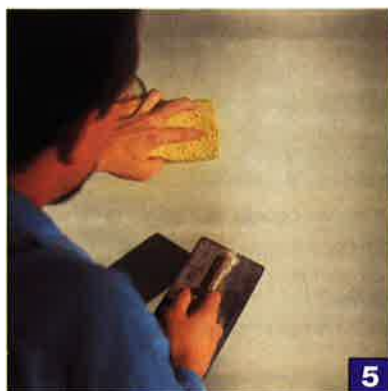
John Marshall starts by chiseling out the old plaster from between the lath and brushing away any loose dust and plaster crumbs. **(1)** The plaster around the hole is scraped smooth with an angle plane or rough drywall screen. He brushes a bonding agent over the lath and all plaster being recoated, then covers all but the smallest cracks with fiberglass mesh tape.

To make lime putty for the patch, Marshall mixes hydrated dolomitic lime with water until



it is the consistency of whole-fat yogurt, then slakes it for at least 20 minutes, leaving a thin layer of water on the surface to ensure even rehydration. The putty is formed into a ring on the mixing board and the bonding agent is poured into its center. **(2)** Marshall sifts in several handfuls of gauging plaster to give the putty more body. **(3)** He mixes everything with his trowel into a stiff dough, which he presses firmly onto the exposed lath and around the edges of the hole, leaving a slight depression for the final coat.

(4) To reinforce the patch, he cuts a sheet of fiberglass mesh to cover the hole and presses it into the wet plaster. **(5)** After the first coat sets, Marshall mixes another batch of lime putty and gauging plaster (this time with less gauging so it's easier to work) and skims a thin final coat over the entire area. He then uses a sponge to touch up any surface imperfections. In 30 minutes the patch has set and the job is finished, without any need for sanding.



plaster of old

Most plaster used in the United States since the turn of the century is based on gypsum. Before then, walls were coated with lime-based plaster, which dates to the time of the pharaohs (it's on the walls of the tombs).

Limestone was burned (calcined) to drive off water and carbon dioxide. The resulting calcium oxide, called quicklime or lump lime, was slaked with water (rehydrated) in sand-lined pits. The mixture reacted explosively, but when the reaction subsided, creamy white lime putty remained. Mixed with sand and animal hair, it was applied over lath—horizontal strips of wood or straw. The first coat, or scratch coat, oozed between the laths to form “keys” that held the plaster in place. Two more layers, the brown coat and the finish coat, were applied to a thickness of about half an inch. The finish coat, usually hairless, had to be “packed”—troweled again and again under pressure. Poorly packed plaster cracked as it dried; homeowners were warned to wait a year before painting.

Plaster made from calcined gypsum rock (calcium sulfate) forms a harder surface than lime without the bother of slaking and packing, but it sets almost immediately. In 1880, a retarding agent made of ground-up horns and hooves was found to slow setting. A quarter of a century later, virtually all the lime plaster in the United States had been replaced by gypsum plasters.

Still, there are some plasterers, like Rory Brennan of Putney, Vermont, who prefer to use lime, especially for restorations. “Rigid gypsum plaster isn't compatible with the softer lime,” Brennan says. He points out that lime takes centuries to harden: “Lime plaster is young at 100 years,” he says.