Plaster: No Dying Art

Last year, we surveyed 29 contractors on the state of the plastering industry in the United States, and the message that came through was the same as that of the 27 surveyed this year: One for one, they said the key challenge with conventional plaster is finding qualified people to apply it. Apart from GenXers as a whole not being of a mind to roll up their sleeves and work their way up from the bottom as apprentices, we have a problem of little demand for conventional plastering, so that, as one contractor from South Dakota put it, “When you receive a call for ornamental plaster repair, you put your apprentices on it and hope they still remember how to handle it five years after being shown.”

Most of those canvassed could come up with no real challenges to the actual application of plastering, given an experienced plasterer. “With skilled craftsmen available,” states a Tennessee man, “there is not much that is technically challenging about plaster.”

So moving beyond the difficulties in creating and maintaining a trained workforce, the key challenges for applying plaster fall into a couple of major categories, principle among which is having other trades, and general contractors, do their own work properly, because, as Walt Pruter, the passionate professor of plaster and kingpin at the International Institute for Lath and Plaster, notes, “No building was ever held up by plaster.” Fifty-nine percent of those surveyed agreed with Pruter’s view.

The real trick is to make sure everyone else does their work properly before us,” says a South Carolinian. “We handle this by job site visits to make sure the framing is right, that all the doors, windows, electrical and mechanical are in properly before we start, making sure all the grounds are set up properly and the lath is installed properly.”

An Alabaman agrees about the need to ensure the framing and lathing of curved surfaces provide good substrates for the plasters to follow.

A Washingtonian was one of two contractors concerned with GCs providing proper temperature control and air movement—bringing the job to a halt until the problem is resolved, if need be.

If Pruter is the king of plaster, then Frank Nunes at the Lathing & Plastering Institute of Northern California, is the prince, and he summarizes the need by plasterers of good team work from the rest of the construction industry players. “When the lather puts lath over a building, he accepts the substrate that he is going over, looking for uneven framing, improperly flashed windows, poor weather conditions, etc., before sign-

By Steven Ferry
ing off and beginning his own work. And so the plasterer also accepts the lath in its condition if he then uses that substrate. Tears in the lath, the paper, whether it was furred correctly, these are the points he looks for. Then the plasterer has to look at his material—the kind of sand he has, the weather conditions, whether he has the crew to man the job, how much time he will be allowed between coats for proper curing to be achieved and before any painting begins, before he begins his own work. The plasterer is to some extent at the mercy of what he is given to work with. He can be pretty creative and skilled, but things will go south if these points covered above are not taken care of.

“The plastering trade is notorious for being unsophisticated when it comes to recognizing and writing letters about conditions. But signing a contract to perform puts us in a tough spot. We are not supposed to redesign the building—someone else was paid to do that, but more often than not, we are doing design-build construction, dealing with architects who are not being funded to do more than 60 percent drawings. The architects are not out on the projects anymore because they are not paid to do so, and if they do come out, they start to assume certain liabilities. The GC, for his part, is focused on time and schedules—that’s where he gets his incentive. As important as these are, concern for quality needs to be part of the package, too.

“So when a plastering contractor runs into problems or sees conditions on the site and tells the GC and architect, the GC looks at his clock and asks, ‘How much time is this going to take you to fix?’ and when the plasterer replies, ‘Wait, you need to fix it!’ the GC says he does not have the time, the crew or the budget, ‘Fix it or keep working,’ he demands and then sends out notices that the plasterer is holding up the schedule and will be penalized. This scenario is the root of the main challenge plasterers face in their work. The economics of construction, not quality, have become the priority in construction today. This, of course, is a false economy in the long term.”

Pruter is of the same mind: “The biggest
challenge is a lack of pride on the part of many contractors to do jobs they are proud of. The bottom line on the balance sheet is worth more than the project they turn out, so there is a tendency to cut corners as much as possible.”

**Eager Learners**

The largest single concern (22 percent of the 27 surveyed) in this category (of other trades impacting a plasterer’s ability to work effectively) is that architects need to know and understand enough about plastering to detail projects properly.

One of the reasons GCs have an opportunity to cut corners, according to Pruter, is “because architects in the design community have not kept current with how to detail and specify good plaster work. They are not taught it in schools and don’t get it by being out on the job site, so we find there is a real educational program required for the design community. There’s an interest, young architects do want to learn, but it’s hard to get to them.”

Confirming this perception is a contractor from Florida who has found that “Proper detailing by architects is an ongoing problem, but many of them get a handle on it after we instruct and guide them on proper ASTM standards for working with material like stucco. We give them sketches of the elevations and add turn joints where we feel they need to go. We try to give them a heads-up on any problems they will encounter, such as ceiling-to-wall intersections. It’s very encouraging when the next set of drawings they provide incorporates our suggestions.”

“Our biggest problem with EIFS,” adds a New Yorker, “is getting the architects to know the differences between the various systems. We find them spec’ing a drainage system in the title but then the spec itself shows a regular PB system. When drainage systems are spec’d, we always end up with a standard system when it comes time to value engineer the project.”

“Architecturally,” agrees a Kansas con-
tractor, “we give our best input, even though we are not engineers, but the problem is deciding which substrate is the best application. Architects call for various claddings that may or may not work, especially with our without control joints. Then there are the folks who don’t know the difference between moisture drainage systems and a regular system, or how they are applied. We handle with trial and error or give it back to the architect, where the problem belongs.”

“Lack of specifications in design,” states Nunes, “is a primary concern for plasterers. “Before you ’even get started, you need to have clear directions in black on white that show what the architects want, what finishes they are expecting to achieve versus what they are actually going to get, having good mockups, plaster samples, etc. These are all significant factors to establish before the plastering even begins.”

“Educating the design community on how to keep their buildings water-tight” is an Oregon contractor’s effort to make things right. A Californian battles the issue by “analyzing the design and providing input to ensure caulking details are correct for the windows, the flashing is correct, before any work begins.”

“One challenge,” states an Alabaman, “is persuading architects who have always used conventional materials, to change to newer ones. Instead of lime gauging for slick finishes, for instance, we use USG Diamond Finish. It’s only one product we have to stock and all you do is stir it and put it on as the gauging is ‘already in the Diamond Finish.’ You don’t have to go through the procedure of making lime and gauge it up to apply it. It has a harder resistance to abrasion when compared to the lime putty that most architects specify.”

**Not What It Is Cracked Up to Be**

Assuming all the elements are in place for plastering to begin, then the kind of issues that sometimes plague plasterers were mentioned by 15 percent of those
surveyed to be cracking from the hydration process and expansion.

“It’s the nature of portland cement to shrink as it hardens, hydrates and gains strength,” explains “Professor” Pruter. “It changes volume as it loses moisture. As it shrinks, it cracks. If it has aggregate in it, the shrinkage can take place around the aggregate particles instead of manifesting itself in a linear pattern on the surface, so no cracking is visible. Moist curing helps reduce the cracking, but one of the last things a plastering contractor wants to do is send a man out to a site on weekends and holidays and mist down the building with a hose to hydrate the cement. He hopes it drizzles or something. Everyone wants to cut corners, but the product has limits that we cannot sidestep.”

Eleven (41 percent) of those canvassed specifically stated that they rarely or never do plaster jobs, citing reasons as follows:

- Being underbid by integrity - challenged competitors ................3
- It’s too hard to apply .............................................3
- It’s too expensive compared to drywall ........2
- It’s too hard to price or get hold of............2
- Local weather makes it too hard ..............1

**More Than It’s Cracked Up to Be**

By now, you may be thinking of wallboard as the Fifth Cavalry riding to the defense of overworked plasterers and that conventional plaster is justifiably not long for this world, but there is an upside to this product. It is far more durable than gypsum board, it can go where no gypsum board can, and it is still very much in use. In fact, two contractors of those surveyed are kept very busy with a lot of plaster work

“Plastering represents 50 percent of my volume, or about 200,000 feet a year,” says a Georgian. “Three years ago, it seemed like there was no EIFS work at all and all our work was plaster.”

“We have been very lucky in our little
So many elements affect good plaster work that you can’t focus on the plaster alone. If a foundation or framing move, the plaster will fracture. So plasterers are counting on proper foundations, framing and lath in order to do their work well.

Bad plaster work usually results from weak or thin plaster. In Europe and even South America, we see good plaster work, but it is all done on masonry. In the United States, it is being done on wood- or steel-stud framing. When done on masonry or concrete, we don’t see plaster problems. Most such problems occur over open framing. So if the open framing can have a sheathing such as gypsum or cement board, even plywood or OSB, you will have some assurance of uniform plaster thickness, with no sagging or bagging between the studs.

How the sheathing is installed is another element in the equation. Over that sheathing, you then need a weather barrier, because portland cement plaster is not waterproof—it is water resistant but moisture permeable. Given enough pressure and time, it will saturate, much like a canvas covering in a rainstorm. So building codes require a weather-resistant barrier over the sheathing and under the lath. This has to be installed without holes or tears and properly shiplapped to divert the water out.

Then the lath over the rigid sheathing has to be the self-furred variety, embedded in the first coat of plaster. If you just nail it flat against the sheathing, there would be no embedment. So the lath has to be attached at furring points and through these furring points, through the sheathing into the supports. They can’t just attach to the sheathing, as there will not be enough holding power. If the lath is properly installed, it will be embedded a quarter of an inch into that scratch coat of plaster. That coat has to be thick enough to embed all the lath and be deep enough to allow some mechanical, horizontal scratching to provide a key for subsequent coats.

Once the scratch coat is on, it has to be kept it damp for 48 hours, unless it has been modified with expensive polymers. If you polymerize the base coat, you can minimize the moist curing requirements. But assuming conventional work, you have to keep the base coat damp for 48 hours. Then you can put on the brown coat, which has to be routed level and then worked with a float to densify the second coat of plaster, taking out all the irregularities. That coat has to be kept damp for 48 hours, and then allowed to dry for five days, so that you get uniform absorption for the third, color coat.

These are factory prepared, integrally colored stuccoes from the manufacturer that go over a pre-dampened, brown coat, even though it has dried out for five days. Some contractors add mixes to help equalize the drying and absorption. So there’s also a lot of magic chemistry involved in plaster work.
niche in the middle of Tennessee,” states a second contractor. “Our little community wants everything that the neighbors have—which happens to include plaster, and so we have been doing a ton of interior plaster—more in the last five years than the previous 15.”

As the South Dakotan said, “If there were a great need for buggy whips, there would be more buggy whips, and it’s the same with conventional plaster today.”

Or is it?

Just as there are buggy whips in use even today, there will always be a demand for high-end and intricate work. There will be some who do not happen to think that houses should be built to last a generation or two, but built to last. So while most people will be happy with the down-and-dirty-and-perfectly-adequate-for-the-desired-end gypsum board, there will be those who need and want quality plaster work. And where there is a need, however small, there will always be someone to fill it.

As Nunes points out, “In Europe, they take longer to build homes and expect them to last centuries. We take days to build them and expect them to last three or maybe six decades. Our society is a disposable society and the pride of ownership is missing in many of those involved in projects. We used to have the right mindset a century ago in America, when we, too, built homes to last generations. Today, we struggle with being economical while still being able to perform, a reality that is reflected in the bidding process. In Europe, they throw out the lowest and highest bids. In America, they go with the lowest bid, making the incentive the economics of the project. People presume that the quality will be the same no matter how much somebody is charging for a project.” But we all know what we get when we pay peanuts.

So the state of plaster, like everything else, is a state of mind. It’s either a dying art, as two contractors claim, or it’s an opportunity to fill an exclusive and rewarding niche. What is most exciting about the future is that it is an empty space waiting for someone to construct something in it. The amazing notion is that few people realize this truth and even fewer are staking their claim.

About the Author
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