Spray Fireproofers Have Their Say

By Steven Ferry

This article is part of our continuing series on building systems and the preferences of AWCI contractor members. In the final analysis, no one knows a system better than the contractors who roll up their sleeves every day and get dirt on their hands at jobsites around the country—so we interviewed several for their honest feedback. Because we’re asking firemen and supervisors to “name names,” they are rewarded with anonymity for their honesty. And considering that as few as 12 and only as many as 25 or so contractors are interviewed we want all readers to know that the findings in this article are not statistically relevant and are not meant to represent any kind of trend—it’s just the opinions of a small sampling of the industry. This may not be an in-depth, definitive study but it does serve as a barometer for those who are interested. Advertise are not involved with this in any way; all the responses are genuine and not swayed by any outside influences.

While spray fireproofing is a vital element in protecting lives in the event of fire, it is viewed almost as an unwanted stepchild within the construction industry.

“We had a major fire in a church two weeks ago,” a Texas contractor explained. “The roof collapsed, killing three firemen. Because it was not required by code, the building had been constructed without any fireproofing.”

A Georgia contractor expressed the same concern when he said, “There are a lot of buildings in the country that should have fireproofing and don’t because the codes don’t require them.”

Spray fireproofing is a passive system that works without fail,” the Texan continued, “protecting the structural steel from collapsing in the heat, thus saving lives as well as the shell. Yet sprinkler systems are being spec’d increasingly instead of fireproofing.

The problem with sprinklers is that they have to be triggered, which opens the door to failures. The recent recall of 8 million heads by a major sprinkler manufacturer, after 40 percent of all them failed in tests, illustrates my point.”

While spray fireproofers are popular with fire marshals, they are not overly popular with building owners, architects and other building contractors.

“Our biggest barrier is gaining acceptance by architects and owners-fireproofing adds to the cost of a building, but does not add anything architecturally, nor does it increase revenue potential—it is seen by them as a necessary evil.”

“We are also viewed as a nuisance to the general contractor and the owner’s scheduling because we require the roof to be completed before we can spray, and we have to install before other
trades can come in. This throws conflict into the schedule.”

One thing that became apparent during the surveys of AWCI contractors who were listed in the 1999 Who’s Who in the Wall and Ceiling Industry as being fireproofers is that 20 percent of them had quit the line of work over the last five years or so, or do very little of it now.

As one Pennsylvania contractor stated, “We never make much money on spray fireproofing. We just do it to capture the rest of the interior package.” Another sprayer, in Florida, stopped spray fireproofing because “a plaster contractor had a pump in earlier years, and sprayed fireproofing. Nowadays, people specialize in it and that’s all they do.”

“We sold our equipment two years ago because the market for it was shrinking and it’s a riskier gamble,” claimed a New York contractor. “You see less and less spray fireproofing designed into the buildings because of the changing New York State Building Code.”

While the above may make it seem that the spray fireproofing industry is about to go the way of the horse and buggy, nothing could be further from the truth. The industry is still very much in demand and continually improving product and processes for the many who still do provide spray fireproofing for the construction industry.

Although the technology and actual material used have not changed fundamentally over the last 20 years, according to a Texan, “the application procedures have been updated by the use of injections and better equipment. Every year we have new UL testing and
There’s a lot less fall-out, mess and waste these days,” according to an Idaho contractor, “as the material adheres much better.”

A survey of 30 contractors and their views on spray fireproofing manufacturers and their products showed that there are three big companies, with W.R. Grace the clear market leader throughout the country. While Grace and Southwest Vermiculite provide only cementitious products, Isolatek (CAFCO) provides both fibrous and cementitious products.

Fired Up Over Cement vs. Fiber

These two product types have decided differences that make them either attractive or not worth messing with, depending upon your needs and views. But as one contractor from Arizona pointed out, “there isn’t any real difference among the products on the market in terms of achieving the same UL and fire ratings.”

As for why the preference, answers were varied, but ease of application and “because that’s what we are used to/have the machinery for” were the main reasons given.

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Predictably, good service was also on contractors’ minds. However, a Pennsylvania sprayer had one observation to make about declining service levels industry-wide: “Despite high activity in the building industry, the spray fireproofing manufacturers have cut down on their sales efforts. Instead of several sales reps in each state, we now have one covering several states, and this has impacted business. My sales rep used to bring me leads. That doesn’t happen anymore.”

One high-scorer for Grace was the fact that architects tend to spec their product, Monokote. Architects were not surveyed to find out why they did so, but the sprayers themselves agreed on several points, including the fact that “it is a hard product that doesn’t damage easily, unlike others that scrape off easily” says a Florida sprayer. “Monokote has improved over the last five years,” he continued. “It is denser and seals better, and doesn’t flake off once it’s dry”.

A Louisiana sprayer says that “Grace has gone to in-line injection of the accelerator and added aluminum sulfate to the material in its MK6 mix. This provides a flash-set that dries the water more rapidly (in 10 to 20 minutes). So one can achieve multiple passes in the same day when working on thick applications, giving better daily production and less fall-out from material falling off beams.

“The other subcontractors on-site are happier with a cementitious product, because it’s a slurry that creates no dust. Airborne fibers coming off a fibrous product during spraying, on the other hand, can make those working nearby itch.”

A New York contractor complained of his men, and other subcontractors on the site “coming down with rashes” from fibrous mixes.

Before everyone rushes out to spec and apply only cementitious products, there are plenty of contractors out there who
prefer fibrous products. “Monokote is a pumped slurry and it’s messy, real messy,” said one disgruntled Alabama contractor. “CAFCO and other fibrous products clean up much more easily.”

“Monokote is so slick when it hits the floor,” agrees a Virginian. “My men step in it and they slide!”

“I may not endear myself with cementitious manufacturers,” asserts one New Yorker, “but fibrous is a safer product from an installation standpoint, as it doesn’t have the slipping hazards associated with cementitious and it’s easier to control the density—density can get away from you very easily on the cementitious product. Cementitious also requires more pressure for pumping, and that results in more wear and tear on the equipment, which anyway is about 25 percent more expensive.”

One other concern with Grace’s cementitious products was voiced by a Pennsylvanian contractor: “Southwest Vermiculite Fireproofing bought W.R. Grace’s old formula, which I think is better because they don’t use polystyrene in the mix, like Grace’s new formula. Polystyrene is flammable, and although it only comprises a small percentage of the mix, it does smoke. I am concerned that if there is a fire and if there is a problem, the owner will come looking for me.”

An Iowa contractor also considered that CAFCO had made “great improvements in its product line, especially in its cementitious mixture—it’s as hard as Monokote-type products.”

A Virginia contractor stated that he uses “Monokote for the low end, as it’s easy to apply and therefore profit margins are good. But I use Southwest Vermiculite for the high-end, hard finishes. They are a smaller niche that most contractors don’t want to mess with, which means less competition for me and good profit margins.”

Fibrous lines have the edge on cementitious for small jobs, according to several contractors interviewed. When nozzlemen do small jobs, or even if
they want to take a break, they can’t just shut off a big hose full of wet material. But with fibrous they can shut it off at any time and crank it back up.

**What the Future Holds**

Whether fibrous or cementitious is preferred today, it looks like the preferred material of the future will be CAFCO’s intumescent “spray paint,” a pricey product already used in chip factories and other clean-room environments.

Such an advance was exactly the request of one Iowa contractor “It would be nice if they could develop a paint rather than the fireproofing, because the fireproofing is so messy [Paint] would be easier to apply, and it would also be easier to maintain.”

“Intumescent fire-proofing materials are the fireproofing of the future,” according to a Texan sprayer. “The technology is very expensive right now, but the cost will come down as further developments occur over the next decade or two—it will change the way we fire-proof our buildings.”

Intumescent paint is like a heavy body paint that is applied, with a primer, directly to exposed steel. It looks like an aesthetic, hard-finish paint coat on the steel. When subjected to a fire, at around 400 degrees Fahrenheit, the coating, which is a maximum of six millimeters thick, starts to foam, expanding up to 50 times thicker, and thus insulating the steel from the heat.

“It’s a better product than low-density materials,” continues the Texan. “We’ll see the intumescent used because it’s a hard, finished material with no airborne problems and nothing to be knocked off.”

The broad application of intumescent paint in the future may also solve other areas that contractors feel could still use some improvement: “There must be a better harness and spray system to make it lighter and easier for the sprayer to use,” said a New York contractor. “The technology hasn’t really changed since 1971.”

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From Georgia came the request for a process that was “less labor and equipment intensive.”

“As much as we maintain these machines, they keep breaking down,” complained a Michigan sprayer, “so more reliable equipment is my wish.”

“If the manufacturers can find a better solution than netting for spraying single, small bar-joints, and that didn’t make so much mess, it would be good,” an Idaho sprayer noted.

Until intumescent paint changes the landscape for the better, there are two other areas that get up the noses of sprayers and that could, if alleviated, make their jobs easier.

**Where There’s Smoke, There’s Fire**

As a New York contractor explains it, “The most difficult part of fireproofing
in general is allowing the fireproofer to do his job. You really need a clean, open space to be able to apply the fireproofing properly. In today's fast-track market, as soon as you're spraying, they've got somebody up your butt doing the next thing. If there's any delay in our application, the mechanical trade is edging ahead of us, causing a scheduling problem."

A Pennsylvanian agrees: "Specs say that fireproofing has to be first in and everything clean, but that never happens. We're always fighting with the plumber and other subcontractors."

More common than scheduling, however, was the complaint from five contractors (from all areas of the country except the West) that many architects and engineers had not the faintest clue what to specify on fireproofing—often omitting the needed rating and thickness and just saying "Spray it." That leaves the contractor with the option of researching and working it out himself, or physically walking the architect through the problem.

"I was doing a big church job recently," said a Florida man, "in which the architect wanted everything on the lower level sprayed, and nothing on the first or second, or on the main beams that were exposed in the attic space."

"The architects don't seem to understand the testing procedures," complained a Pennsylvanian contractor, "as we constantly receive specs with bad tests: columns using a UL test number for floor decks and vice versa. It really calls for better coordination between architects and the spec writers on what is required. This applies also to the building code people, too. There's got to be some coordination as to what's acceptable and what isn't."

"Because of the discrepancies between the blueprints and the specifications, or the complete lack of information," adds a Texan sprayer, "I have to put an hourly rating in there, but I'm not a structural engineer. I don't want structural failures in buildings in the event..."
of a fire. So I would really like to see architects and engineers do a better job of writing the specifications and putting them onto the blueprints."

Another Pennsylvanian sprayer had a different angle on the same problem: "Fireproofing is highly misunderstood in our area. An architect and engineer will show me a building and say ‘We want 2R fire rating,’ and they think it’s a generic thing, like drywall—‘apply two layers of drywall and you get an R rating.’ Whereas fireproofing depends on the assemblies. There’s more that goes into the actual ratings.”

An Arizona contractor also pointed out the need for uniformity and know-how applied concerning inspections. "In some areas of the country, they're not even required. Where they are, some state and local authorities are not up-to-date on code requirements.”

Lest it sound like sprayers think the whole world is “agin ‘em,” they also do recognize that one of their biggest hurdles is plain sloppy work carried out by some of their own: "When you price something to do it right, and somebody else prices it to do it wrong and wins the bid, then we all lose,” the Arizona sprayer added.

Whatever the day-to-day trials and tribulations of spray fireproofing, the industry is performing a vital role for building occupants, owners and the industry as a whole. It has a bright future ahead, and plenty it can do to improve working relations with building-industry colleagues today.

About the Author
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