The Evolution of Lath and Plaster

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There have been many changes in the lath and plaster trade during my 20 years in the industry. In 1972, we were still shipping rail carloads of expanded metal lath to contractors who were doing jobs that took months, even years to complete. However, during the 70s and 80s we saw at least five metal lath manufacturers leave the business, considerably reducing production capacity of our industry. In this article I will relate what has happened to revitalize our industry to the extent that five new manufacturers of metal lath have entered the market in the last eight years. These manufacturers have invested millions of dollars in what was perceived to be a dying industry not too many years ago.

Early in this period the EIFS (Exterior Insulation and Finish Systems) were being introduced to this country from Europe. These systems, though initially controversial, have steadily grown in popularity, uses, and in the number of manufacturers producing them. I can recall many discussions with members of the lath and plaster industry about EIFS, and what its influence might be on our industry. Early on, everyone wanted to believe that susceptibility to damage was inherent in these systems which would deem them to be short lived and unsuccessful. Many people overlooked the problems we were having in our own system, namely, cracking problems, poor color selection and performance, the lack of freedom offered for architectural creativity, and last but not least, the shortage of qualified craftsmen and mechanics, which has led to poor installation practices.

All of the above led to a market that was ripe for change. Many industry leaders, including some in our company, believed that lath and plaster was dying a slow and painful death, as evidenced by the demise of such industry leaders as Inryco, Ceco and Wheeling.
The diamond mesh used on this job is lighter, stronger and has larger diameter openings than traditional mesh.

What has happened to bring this industry back from the grave? Simply, it is a willingness to admit that problems did exist and to make positive changes. Also we are an industry that has used modern technology to incorporate the best of both worlds (EIFS and stucco) to create a system that should endure for many years to come.

Let’s examine what exactly has evolved to fix the problems listed earlier. The largest perceived problem with lath and plaster is maintenance due to cracking. This problem has been greatly reduced by innovations that have come indirectly from the EIFS industry. Many contractors now add chopped alkali resistant fibers and acrylic modifiers to the scratch and brown coats of stucco, to add strength to these coats and to slow the curing process. This creates a stronger, more crack-resistant membrane which requires less curing time between coats. Since time is money, this results in cost savings. Additionally new expanded metal lathing products have been developed that are lighter, stronger, larger and have greater diameter openings. These larger openings allow the fiberglass fibers to embed and key into each opening to assure excellent mechanical bond. Regular diamond mesh lath tends to cause lamination of the fibers on the surface of the lath rather than total embedment; woven wire mesh, which has larger holes, is much harder to keep flat and smooth on the wall. It also has fewer keys to offer structural support.

Additionally, many new accessory products have been introduced to the market. Primary among these are vinyl accessories. Rusty galvanized beads have long been a concern in exterior stucco work. This concern previously was solved by the use of zincalloy (99% pure zinc) accessories. These products have become so expensive in recent years that many contractors and specifiers have preferred to risk the consequences of
The plastering contractor installed paper-backed mesh on this residential job.

using galvanized beads. Vinyl accessories have provided a much more affordable alternative by providing very effective functional products, at one third the cost, that will not rust. New weather-resistant vinyls are available that will endure for many years.

Products such as the vinyl foundation weep screed (recommended in ASTM C 926 for use at the base of all exterior stucco walls) can now be produced inexpensively in vinyl. This screed (see Figure 1) allows moisture to escape the wall cavity rather than get trapped in
the casing bead at the base of the wall.

Previously, three-coat stucco would have been finished with a portland cement stucco finish coat applied approximately 1/8 in. thick. Often this coat would have color added to it. The color selection was somewhat limited, the colors were generally pastel, not bright and vibrant, and often these colors faded, even becoming chalky after only a relatively short time. Once again we can thank the EIFS industry for providing an answer to these problems. Knowledgeable contractors are now finishing their three-coat system with the same acrylic finishes that are used to finish soft coat EIFS.

Why is this an advantage? These finishes offer movement and an elongation ratio far greater than portland cement. Portland cement is restricted in movement; that is, de-

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flection is limited to $L \over 360$. In plain English, portland cement will crack if deflections are greater than mere fractions of an inch. For this reason, many industry experts believed that cracking, either minor shrinkage cracking or even some structural cracking, was inevitable. Though we still witness some minor amounts of cracking with acrylic coating, the amount is greatly re-
New products and installation innovations have helped revive the lath and plaster market.

duced and generally deemed very acceptable.

Recently developed paint applied and trowel applied elastomeric coatings (some of which have elongation ratios in excess of 300%) are now becoming available. These coatings will do even more to enhance the beauty and durability of stucco.

As an added benefit, architects and owners now have hundreds of colors to choose from, and multiples of these colors can be combined on the same job to add architectural relief and design.

This leads to another evolution. For decades beautiful architectural decorations such as quoins (corner stones), cornices, keys tones and beautiful window details were molded in stucco by the craftsmen and artisans of our industry. Unfortunately, the number of mechanics qualified to do this work has dwindled, while the cost has risen greatly, to a point that very little new work is being performed in this field. However, this void has been filled by the EIFS industry. Once the brown coat has been finished to a relatively smooth coat and allowed to cure for a period of time, foam shapes (available in a large number of configurations to fit almost any need) are then prepared for finish by first applying
alkali resistant fiberglass mesh which is embedded in an acrylic base coat, and prepared to accept an acrylic finish coat. As stated earlier, the acrylic finish coat is then applied directly to the brown coat and the prepared shapes. Multiple colors are often used to define the architectural reliefs from the field of the walls.

The newest innovation to our industry takes all of the previously mentioned innovations one step further. The EIFS manufacturers themselves have created a new one-coat system or design. This system will be covered in detail in a subsequent article, but briefly the system is laid out as follows. Stud walls (wood or metal) are covered in expanded polystyrene (optional), gypsum sheathing, metal lath (often the newer flat rib, large diamond type of lath which better accommodates the chopped fibers), a 3/8 in. thick membrane of highly acrylic-modified, fiber-added portland cement stucco and finally an acrylic finish coat. This system eliminates one of the three coats, thus reducing costs while maintaining excellent durability. Once again the new elastomeric coatings will serve to make this system even more acceptable.

We are seeing one-coat systems, currently manufactured by a number of the EIFS manufacturers, steadily growing in popularity. This is particularly true in the residential housing markets of the southeast, the southwest and the west coast.

The lath and plaster industry has much for which to thank the EIFS industry. Because of shared technology, and the increased preference for the aesthetic beauty of stucco created by the appearance of the EIFS products, metal lath and stucco are now being specified more than at any time in the past.

Our industry can be proud of the resurgence of life brought about by improved workmanship and advances in technology. We are thankful that the specifying community has accepted this evolution and allowed our industry to grow and prosper, proving that one-coat and three-coat stuccos are still among the most durable and affordable wall systems available in the marketplace today.

About the Author:
Gary J. Maylon has been active in the marketing of light gage steel framing and metal lath and accessories for his entire professional career. He is manager of the Marketing Research & Development and a member of the technical services staff of Alabama Metal Industries Corporation (AMICO) where he has been employed for 15 years. Prior to joining AMICO, Mr. Maylon was employed by Wheeling Corrugating Company for five years.

Mr. Maylon is active with AWCI and the Metal Lath/Steel Framing Association (ML/SFA) and currently serves as Chairman of AWCI’s Technical Subcommittee on Light Gage Steel Framing. He is an officer in the Southeastern Conference, sits on the ASTM C-11 committee and the plastering committee of the American Concrete Institute. He has written numerous articles pertaining to the metal lath and steel framing industry.