I’m involved in an estate home built in 1913. The exterior walls are clay tile covered with stucco, and the interior is wood lath and gypsum plaster. To my surprise, some areas, mostly ceilings, have metal lath. I was sure that this was an addition built some time later, but the original plans show these curved plaster ceilings. The lath has larger openings than today’s expanded metal lath. Is it possible this is from 1913? When was metal lath invented, and when did it replace wood lath as a plaster base? —M.F., Washington

The process for creating sheets of metal, “perforated to be used as a plaster base,” was patented in 1839 by Peter Naylor, an American inventor. By 1884, J.F. Golding had developed “a process of cutting parallel, staggered slits in sheets of metal that were then expanded to form diamond-shaped openings.” Though the openings in Golding’s base were somewhat uneven in size and much larger in width than those used in current products, the material he developed became the prototype for today’s mass-produced expanded metal lath products. (Quotes from Diehl, page 46.)

By 1913, metal lath was being widely used in the construction of new dwellings. We have a number of manufacturing company promotional pamphlets in our research library that were written between 1910 and 1930, some of which were published by companies that boast of having been in the metal lath production business since the 1890s. A 1918 promotional document published by the Associated Metal Lath Manufacturers titled “As a Man Liveth” has pictures of a 27-year-old metal lath and stucco house that has given “perfect satisfaction.” Clearly, the dwelling you are examining could easily have been constructed using metal lath.

We are certain that metal lath was used to construct residential dwellings before 1900, but the exact moment it usurped the most-used plaster substrate from wood lath is very difficult to determine.

Based on a perusal of old promotional literature, it’s likely that the use of metal lath began to supersede that of wood in the period immediately following World War I, but no independent statistics exist to corroborate that belief.

The first independent metal lath and stucco system testing committee set up by the Bureau of Standards didn’t convene until 1914. It appears that until that time some doubts about the durability of metal lath systems hampered their acceptance within the marketplace. Indeed, some literature from that time alludes to the notion that earlier manufacturing processes for lath were not tightly regulated and that some problems with inferior product—primarily in the lath’s coating materials—may have occurred.

But by the early 1920s it seems the use of metal lath as a plaster substrate was fully accepted by the industry; textbooks produced during that time give equal consideration to both metal and wood lath as suitable substrates for plaster. Indeed someone was using the material, because in 1923 the Department of Commerce found it necessary to initiate proceedings to create simplified standards for the manufacture of the material. Why? Because more than 125 varieties of metal lath were being sold nationwide—a selection that was eventually whittled down to 24 standardized varieties.

Now, a correction. Our March 1998 column contained an error. Diligent reader and buddy George Shortreed of G-P Gypsum politely pointed out that we improperly identified the diameter of a nail as 0.0148 inch when it should have read 0.148 inch. Thank you, George.

About the Author
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