Coordinating Research and Design to Enhance Industry Growth

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The Metal Lath/Steel Framing Association (ML/ SFA) was established over 50 years ago to promote metal lath and steel framing. This organization assists architects, engineers, and contractors by providing valuable technical, application, and product information in manuals, bulletins and articles formats. The ML/SFA joined the National Association of Architectural Metal Manufacturers (NAAMM) to form its own division in 1987. The combined strength of NAAMM’s divisions yields a national recognition and sphere of influence beyond what the various divisions could individually accomplish.

Metal framing has many substantial and inherent advantages over various wood and block construction systems. Standardization of engineering, design and product performance set the stage for increased field applications of steel framed buildings and homes. The “design guide,” which the ML/SFA will ultimately publish, establishes the working standards for architects, engineers, and manufacturers. This “design guide” will substantially increase the amount of steel framing used in the construction industry. The research discussed later in this article will provide some of the primary input for this “design guide.”

NAAMM employs a technical representative, Edward Estes, Jr., who has been instrumental in consolidating with other associations and agencies to further the goals of the ML/SFA division. For over 20 years Mr. Estes has served on the American Iron and Steel Institute (AISI) committee on the “Specifications for Cold-Formed Steel Structural Members.” This committee is responsible for the development and maintenance of the Specification for the Design of Cold-Formed Steel Structural Members, a consensus specification recognized throughout the world as the authority in the design of cold-formed steel.

Under the supervision of this committee the cold-formed steel industry sponsors research to develop more efficient, safe and economical cold-formed steel structures. The ML/SFA is also sponsoring an aggressive program with matching funds from AISI to accomplish this end.

The AISI also sponsors a “Steel Industry Code Forum.” With the support of the AISI Committee on Construction Codes and Standards, the AISI staff of engineers coordinate efforts on behalf of the industry to show a unified front when dealing with building code officials and government agencies. ML/SFA through NAAMM is represented on the Forum. As a result, monthly updates are received reporting the status of proposed changes in building codes which are of interest to the industry. The AISI has an engineer assigned to each of the model codes agencies—ICBO, BOCA and SBCCI. The ML/SFA relies heavily on this expertise and cooperates with AISI on a frequent basis.

A recent example of cooperation with AISI was the handling of the Corps of Engineers moratorium on the use of cold-formed steel studs with brick veneer in curtain walls. With AISI’s assistance, representatives of ML/SFA held conferences with the Corps of Engineers’ representatives providing much needed input into the Corps standards. These revisions to the Corps standards resulted in a lifting of the moratorium.

NAAMM’s Technical Consultant also represents ML/SFA on several ASTM committees which include those concerned with the basic steel used in the industry and the properties of the finished product. While many ML/SFA members belong to ASTM, the NAAMM representative coordinates their efforts so that the industry can have a united front in the development of consensus standards.

Prompted by code officials’ concerns over the effect the punchout has on the structural performance of C-shaped studs and joists, the ML/SFA has been actively involved in a joint research program with the AISI at the University of Missouri-Rolla for the past two years. Researchers have performed hundreds of tests on both punched and unpunched C-sections supplied by ML/SFA members to determine the punchout effect on bending strength, shear strength and web crippling. Successful completion of the research is expected in mid 1993. The information collected will be presented to the AISI subcommit-
The research will also be the cornerstone for the development of a ML/SFA design specification for C-shaped studs and joists aimed at standardizing the analytical methods used by manufacturers to calculate structural properties of their products.

Research and testing at Cornell University has been sponsored by ML/SFA and AISI to develop industry standards regarding commonly used construction techniques. Testing results will be used to develop recognized procedures for the rational design of “conventional construction” by taking into account distribution at loading, composite action, and redundancies in a completed wall assembly which incorporates light gage steel products. The goal is to promote acceptance criteria within the building codes as well as the design profession.

Manufacturers that comprise the ML/SFA are informed and versed with the latest design, specifications and code changes that affect the industry. The membership is able to incorporate the necessary changes in their respective products to comply with the design requirements and code changes to insure the end user a qualified and state-of-the-art product. The ML/SFA is instrumental in the self determination of lightweight metal framed construction and the increased usage of their products in the future.

The following ML/SFA publications provide valuable information of interest to the wall and ceiling industry.

The ML/SFA 920, Guide Specifications for Metal Lath and Furring provides specification information, installation procedures, and typical details for metal lath, steel framing, plaster accessories and control joints (40 pages). (Available from AWCI. Call (703) 6842924.)

ML/SFA 540 Lightweight Steel Framing Systems Manual describes the advantages of steel framing systems, specifications for steel framing, panelization and fabrication guidelines, framing connections and erection guidelines (25 pages). (Available from AWCI. Call (703) 684-2924.)

ML/SFA 541 Section Guidelines: Lightweight Steel Framing assists specifiers in minimum physical and section properties, design considerations, manufacturing tolerances, steel thickness and finish (3 pages). (Available from ML/SFA. Call (312) 992-6222.)

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