



# Technical Corner

## AIA's Las Vegas Product Show

The WWCCA / TSIB – Las Vegas, once again participated in AIA's Annual Las Vegas Product Show. The event was held at the Riviera Hotel where over 120 exhibitors featured the latest in Technology, Products and Services for the design and construction industry.

The TSIB staff consisting of Michael Logue-Director of Technical Services, Darin Coats and Bob Campbell-Technical Representatives, manned the 10 x 40 booth. Where they displayed one of its most effective and educational promotional tools for the design and contractor community, the TSIB Mock-Up Trailer. This mobile trailer enables the TSIB staff to display full scale Lath, Plaster, Drywall, Levels of Finish, Metal Stud Framing, EIFS, Head of Wall and Joint details. Complimented by a Power Point presentation referencing specific Codes and Standards.

Over 500 were in attendance for this one day event and once again TSIB received request from Architectural firms for a Technical presentation.



## LAS VEGAS MEMBERSHIP MEETING OCTOBER 27, 2004

The October Contractor / Affiliate Membership Meeting will be held at McCormick & Schmicks 12:00 ~ 1:30pm

Guest Speaker  
Mr. Bob Grant

Topics of Discussion:  
Current Code Requirements and Approved Fire Rated Head of Wall and Joint Assemblies.

*This meeting's Topic of Discussion was brought to TSIB's attention by one of its Contractor Members. It is TSIB's continuing goal and as a service to its members to research and provide the most accurate technical information to date. We hope we accomplished this and urge our members to speak to a TSIB representative about issues in the Industry they would like to learn more about. For more information about this meeting or other upcoming meetings in the Las Vegas Area, Please contact Bob Campbell (702) 319-2717*



# Technical Corner

## The Importance of Furring in Self Furred Lath

By  
Michael Logue

The idea of furring out lath has been around for many years. The concept is very straight forward: a 1/4" +/- furring wad is installed on the fastening nail. The wad is slipped behind the wire, in between the backing or framing and the mesh. The nail is firmly driven through the backing into the supports, holding the mesh off the backing by the thickness of the furring wad.

This was a great system for attaching 1-1/2" 17 gauge woven wire mesh through wood based sheathing on wood supports. However, what happens when the job involved metal stud framing with gypsum sheathing and expanded metal lath? The diamond shape openings on expanded metal lath are far too small to fit a furring nail through.

In the late 1950's, self-furred, expanded metal lath was developed. The method of furring was achieved by deforming dimples in the sheets. The furring points were arranged in a diamond pattern with horizontal rows of dimples staggered at 6" on center and vertical columns of dimples spaced 3" on center. These dimples were to be the location points for the fastener which help hold the lath off the substrate 1/4". This system worked well over masonry, however, since the dimples were on a 3" module they did not line up framing members spaced 16" on center. When the lath was attached outside of the furring points it was flattened out. There were early attempts at making expanded metal lath with larger openings that could facilitate the furring wads; one such product was called stucco mesh. However, with the ease of installation, and widespread acceptance, lathing contractors demanded the self furred dimple lath and stucco mesh was taken out of production.

As the post war boom of the 50's ran into the 60's and labor costs increased, contractors began a push for higher production. The productive value of pneumatic staple guns for attaching lath became clear and manufacturers responded by releasing self-furred 1-1/2" 17 gauge woven wire mesh was now which included furring at the crimp points. This enabled self furring while benefiting from the use of pneumatically propelled staples for wood supports. Additionally, welded wire lath was developed in this time period which was always self-furred.

Staple attached self furred lath was the standard throughout the 80's and the 90's until the release of the 1998 California Building Code (based on the 1997 UBC model code). This new code was packed full of structural amendments based on data collected following the 1994 Northridge Earthquake. The 1998 CBC, chapter 25A [For DSA/SS, OSHPD 1] contained table 25 A-B, footnote 2. The note reads:

**Metal lath and wire fabric lath used as reinforcement for cement plaster shall be furred out away from vertical supports at least 1/4 inch (6.4 mm). Self-furring lath meets furring requirement,**

**EXCEPTION: Furring of expanded metal lath is not required on supports having a bearing surface width of 1 5/8 inches (41mm) or less.**

This controversial footnote effectively stopped the use of self furred expanded metal lath over plywood or gypsum sheathing dead in its tracks. Bad for self furred woven and welded mesh, but death for expanded metal lath. Why? Because of their large openings, woven and welded mesh could still be used but would need to be attached with furring nails. Expanded metal lath, however, (as mentioned earlier) could not be attached with furring nails.

This sent expanded metal lath manufacturers and lathing trade reps into a dizzying spin. The plaster base of choice, expanded metal, was no longer CBC approved for use over wood or gypsum sheathing. Through the efforts of the manufactures, WWCCA lathing expert Walt Pruter, and Howard "Chip" Smith of the DSA, the footnote was amended. On 12/29/2000, 18 months after its release, the DSA introduced the 201 triennial adoption for the CBC with revised language that permitted the use of self furred lath. The new footnote reads:

**Metal lath and wire fabric lath used as reinforcement for cement plaster shall be furred out away from vertical supports at least 1/4 inch (6.4 mm). Self-furring lath meets furring requirement, except when installed over plywood sheathing or similar rigid backing. The use of self-furred lath is subject to a satisfactory jobsite demonstration for each project of the lath installation, with approval by project architect and the enforcement agency.**

**EXCEPTION: Furring of expanded metal lath is not required on supports having a bearing surface width of 1 5/8 inches (41mm) or less.**

The new language went through final express terms and was published in the 2001 CBC. Now, with the approval of the architect and the jobsite inspector, self furred lath was approved for use.

Satisfactory jobsite approval from the inspector now became the question. Mistakenly, some inspectors were taking jobsite approval to refer to CBC § 1403A5.6 Bond strength and test. This section covers veneers which describe Portland cement for use with masonry veneer units. According to DSA's Chip Smith, what is meant by job-site demonstration is "an initial installation by the lathing contractor that demonstrates that the 1/4" furring space is being provided".

In making these demonstrations, lathing contractors soon found that dimple expanded metal lath could not be consistently furred away 1/4" as the dimples did not fall over the supports. At the urging of WWCCA, manufactures developed the "V" groove self furred expanded metal lath. In this product, the furring points are "V" shaped grooves running longitudinally every 6" on center. Since the lath is installed perpendicular to the framing supports, the furring points were guaranteed to intersect the supports.

### Where are we today?

As the scrutiny of inspections continues to bear down on school and hospital projects, more and more lath inspections are failing and inspectors are becoming increasingly reluctant to approve self furred lath. TSIB has been call out to projects where the Inspector has rejected self furring lath because the attachment to door and window framing (greater than 1 5/8" wide) is outside the furring "V" groove. This is a common occurrence because a rip sheet of "V" groove lath is probably not going to have the "V" groove right at the edge where the fastener is located. When this happens, it is recommended that the lath be pulled with a hook shaped piece of steel (a bent welding rod with the coating scraped off works well) around the fastener to reinstate the fur.

Another new concern is with Structalath. This welded wire plaster base is designed to be attached to framing supports outside of the furring points, (see ICBO Evaluation Service ER-5550). While the manufacturer has designed and engineered the product to maintain a CBC compliant 1/4" furring, the unorthodox attachment method has DSA engineers concerned. TSIB has written letters of support on projects where our contractor submittals are being rejected on this notion. Additionally, Structalath manufacturer representative Frank Arnold is available for product support and has indicated that Structa Wire Corporation will be revising the language in their Evaluation Report and product literature.

In summary, the benefits and value of good furring is clear and has proven itself in over 50 years of plaster reinforcement. The idea is to put the reinforcement in the middle of the scratch coat, thereby providing a solid key in the lath. The failures that the Structural Engineers Association of California (SEAOC) reviewed following the Northridge Earthquake were both from plaster separation from the lath and from lath separation from the framing supports. The latter being more prevalent. When any of the approved, self furred lathing products are used and properly installed, the vast majority of the weight of the plaster will be supported by wire or expanded metal in or near the middle of the scratch coat. There may be a small percentage of plaster that falls outside the furring point, but the overall weight that these unfurred areas contribute is infinitesimal in the overall scheme of the plaster assembly. The attachment of the lath to the framing supports is far more important than a 100% furred plaster base and should never be compromised to achieve the latter.