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From Our Readers

TRUSSES: ONE INSPECTOR'S PERSPECTIVE

When I began working in construction in 1963, trusses were a relatively new item. When I became a general contractor in 1970, trusses were still relatively new, but had gained some acceptance. When I became a building inspector in 1981, trusses were widely accepted especially in upscale residential construction.

The changes that have taken place since then have been phenomenal. In 1981, a large home including the garage was approximately 2,500 square feet. The ceilings were 8' high and almost always flat. The main structure was comprised of two masonry rectangles with a tie beam and possibly one girder beam. Doing a framing inspection on this type of home was relatively simple. Today, relatively few houses look like this. Even plain and modest homes have added vaults, scissors, trays and other nonconventional ceiling lines not considered possible a few years ago. This new ability has added character and visual stimulation to smaller homes, and drama and opulence to larger ones.

But along with this newfound freedom of expression, have come new responsibilities and obligations on the part of the construction workforce and the professional design community. As well, those who design and fabricate trusses have been placed in a very precarious situation. They are expected to do what is almost impossible in many cases and do it on an ever-tightening budget.

At present, at least in the area that I'm familiar with, far too often trusses are not being handled properly, installed properly, braced properly or secured to the rest of the structure properly. It would be presumptuous to say that this is happening everywhere. However, understanding the commonality in construction and inspection practices, it would be hard for me not to assume this is all too common.

With regard to handling and installation of temporary bracing, we've seen the bracing that is used and the chances that are taken. It would take Solomon to solve this dilemma. However, there are issues that can and must be addressed. In the field, I'm finding trusses designed for inappropriate wind zones. Trusses designed not to be used within five miles of the beach are being used on the beach (lower than required wind design loads used) and trusses designed not to be used over open porches are being used over open porches. I’m finding tradesmen, superintendents and contractors almost never read those portions of the cut-sheets (e.g. Truss Design Drawings), and if they do, it’s not until the shingles are on the roof. In addition, I’m finding tradesmen and superintendents who do read the cut-sheets are having a difficult time reading them for a multiplicity of reasons. One of the biggest difficulties in trying to decipher the cut-sheets comes from the fact that different manufacturers use different layouts and designs for their printed text. Another obstacle that increases the difficulty is the supplemental

material that is added to the packages. Often, alternate designs and required information can only be found by reading the supplemental packages. I refer specifically to gable bracing and alternate continuous lateral bracing. Sometimes girder nailing or bolting is part of the supplemental material. Often grading notations are important. I recently found a truss that required a top chord brace. The brace was required to be the same grade as the top chord. The top chord was SS and unfortunately, the framing contractor couldn't find any SS. When he requested it from the truss fabricator, he was told it would take a couple of days to get it on special order. When it did finally get to the jobsite, it was No. 2SYP. A similar situation occurred when a web member was required to be braced with SS. When the truss plant was requested to ship the material to the jobsite, the material they shipped was not grade marked, but they assured the contractor that it was SS.

The most recent situation is yet to be resolved, but helps to illustrate the confusion faced by inspectors, contractors and building departments. An inspector questioned a 14' cantilever over an open porch. The cut-sheets called for an enclosed building with no open porches. When this was brought to the contractor's and truss plant's attention, the contractor and inspector were assured by the truss plant that recalculations would have little effect. When the new cut-sheets arrived at the job site several days later, they showed increased bracing of web members and an increase in the size of the truss plates. When the truss designer was contacted, he said after doing hand calculations, he felt the plates that were in place would be fine. Everyone involved in this project is feeling a great deal of pressure because of deadlines and changing interest rates. As of this writing, no sealed documentation has been supplied to resolve this issue. I use it as an example to point out some of the dilemmas being encountered by those using and inspecting trusses.

It would certainly be foolish on my part to try and solve the problems of the truss industry. But, I would suggest and request that truss manufacturers and designers consider a cooperative effort to add uniformity and consistency to truss cut-sheets and printed materials supplied to jobsites. If more detailing could be placed on special bracing requirements, it would make it easier for tradespeople, contractors and inspectors to recognize the special bracing. As well, if truss designers and suppliers were to pay special attention to open porches, height above-grade, wind speed zones and distances from the beach when they did their design, many problems at the point of erection could be avoided.

I'm sure that any efforts on the part of those who design, fabricate and supply trusses would be appreciated by all of those involved with this very efficient, highly-technical, evolving product.

—Frank O'Neill, Peico, Inc., Fort Myers, FL

EDITOR'S NOTE:

What a timely letter and a great way to reflect on the fact that our association is working on items that seek to provide positive, proactive solutions to field problems and issues like the ones that have been brought up here. Here is what we have done:

- Truss Technology in Building (TTB) document on how to read a truss design drawing

- TTB document on how to read a placement plan
- TTB and commentary on temporary bracing, “Always Diagonally Brace for Safety"
- TTB document on permanent web bracing
- Customizable jobsite packages

Here is what we are in the process of doing. The standardized truss design drawing issue was brought up at our chapter summit in Albany, NY and has been added to the Technical Business Committee’s agenda for discussion and the development of an action plan. We also discussed the development of a T-bracing tag to add to our set of tags to deal with those situations where lateral bracing just will not work.

Finally, in the longer term, WTCA was very involved in the initiation, is a director of, and has been working with the NAHB Research Center on a project entitled the National Housing Quality Certified Trade Contractor Program. Our goal is to provide a systematic approach to framing quality control and through this, to improve the ability of component technology to perform as everyone expects. In our experience, many errors in the construction process show up when the trusses are being set. If we develop a good quality control process that serves as a proactive, educational approach to problem solving, the frustrations should diminish. Unfortunately, this work will not be completed overnight.

Our goal at WTCA is to be an asset in the problem-solving arena. In some areas we can react quickly, in others we will continue to take one small step at a time, until we finish. In either case, our goal is to work with those who see these issues and come up with logical and practical solutions. It is through our membership and communications like this that allow us to make real and sustainable improvements to our industry.

SBC HOME PAGE

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