Alliance Construction Inc.
2045 Placentia Ave. Costa Mesa, California 92627

January 21, 2008

Response to MISC1-0208-R1

I have been a licensed contractor in California for the past 25 years and I have been in the construction Industry for the past 35 years in the wood and steel framing specifically. I must say that regardless of the intent of the test protocol that is practiced, the quality of the final installation of all hardware and structural devices on all structural shear walls and non-structural walls and components are always built comparable to the tested assemblies, if the management of the project is prepared. If they are not, then the work of adding or correcting errors and omissions will quickly eliminate any potential profit that might have been possible in the beginning. Unfortunately for Mr Commins, to believe that the addition of a slack take-up device will positively affect the result of faulty workmanship is not realistic.

After reviewing the proposal as well as review of the current AC316 proposed revisions, I have the following remarks:

I agree that the issue of material shrinkage in lumber, is an event that cannot be prevented entirely on the jobsite. With the substitution of manufactured floor and roof components, shrinkage at the floor systems can be reduced significantly. Regarding the issue of shrinkage of plywood, as mentioned in the Commins Letter, my experience is absolutely the opposite. I have experienced swelling of plywood and OSB, and never shrinkage.

I must also disagree with the author with regard to the similarities between wood and cold formed steel framed buildings and the shrinkage statements. I believe that if a shrinkage take-up device should someday be required to be included for cyclic testing, and ES staff and Committee agree that such a device should be a required component, I think that any perceived value that might be gained, could only be measurable in wood framed structure, not cold formed steel.

Poor construction and loose fitting components are not acceptable in the field application any longer. The construction inspection process has improved tremendously over the last 10 years, and I can say that if loose bolt-on hardware attachment and misfit components exist, it is the exception and not the rule. Furthermore, they will be repaired before framing inspection is complete and approved.

I do agree with the author, that we should make every effort to improve on our technique and keep our buildings safe. I also agree with his intention to keep our buildings more rigid and not too ductile, is a huge benefit to the end user whose expectations are that their home will be safe and not be destroyed in the next big event. Unfortunately, adding a take-up device on any cold formed steel building will not solve any quality or shrinkage issues being discussed. Cold formed steel has many improved performance and stability properties compared to lumber. Therefore, the inclusion of AC154 and AC230 should be excluded in this particular dialog. Their protocol is only intended for use with cold formed steel components.

In closing, I would like to mention that the upgraded codes have added redundancy in wood and cold formed steel construction. Most of these changes have taken place since the Northridge earthquake. These changes over the past 10 to 15 years have added significantly to the strength and stiffness of the new structures being designed and built today. In addition, the structural engineers participation, through the “structural observation” process, have created a much higher degree of quality control among all of the construction industry tradesman. These two improvements and many others, such as re-tightening all bolt-on hardware and verifying the installation of all nail-on hardware before the framing inspection is complete, eliminates any mistaken coverage by the other trades. These procedures are required before a framing inspection is completed and are the practice and standard that specifiers use to design Today and Tomorrow. We must always keep in mind that it is the individuals that make the building, but the success of all projects large and small depend entirely on the supervision, direction and good common sense from the design community. These are the cornerstone for quality, safety and success in Construction.

Thank for this opportunity to Comment

Carleton Elliott/President CEO
Alliance Construction Inc.

Commins Manufacturing Inc
960 B Guard Street
Friday Harbor, WA 98250

January 4, 2008

Mr. Kurt Stochlia, P.E.
ICC Evaluation Service, Inc.
5360 Workman Mill Road,
Whittier, CA 90601-2299

Via internet kstochlia@icc-es.org

Subject: MISC 1-0208-R1

Dear Mr. Stochlia:

Recently I reviewed a test report (*Report of a Testing Program of Light-Framed Walls with Wood-Sheathed Shear Panels)* covering shear panels with induced shrinkage. Most shear panels were tested with a proprietary, stiff hold down (designed by Ben Schmid) not commonly available. Most panels were tested with the shear panel tightly bolted to the test frame. However some were tested in the loose condition. The induced loose condition varied between 0.200" to 0.400".

Shear panels that had as little as 0.200" (slightly more than 3/16") of looseness introduced at the tie-down bolt consistently lost 40% of their lateral capacity. This looseness was introduced by backing off the anchor bolt nut. However, looseness can come from wood shrinkage, a flexible tie-down system or shrinkage compensator backlash.

This problem is compounded by at least two system variations. Shear panels vary in length and shrinkage is seldom consistent. Some panels will be tighter than others. When loaded laterally (wind or seismic) some locations will carry load while others will "float". Loading will quickly shift to the tight-stiff locations and a progressive failure may result.

If we use lateral values per the code, buildings must be built perfectly or a method must be used to "even-out" loads and deflections. Shrinkage compensators are one way to do that. I don't know of another.

Best Regards

|Signed|

Alfred D. Commins,
President
Commins Manufacturing Inc.

References

Report of a Testing Program of Light-Framed Walls with Wood-Sheathed Shear Panels. Structural Engineers Association of Southern California, COLA-UCI Light Frame Test Committee Subcommittee of Research Committee and Department of Civil and Environmental Engineering, University of California, Irving, December 2001.

Phone (360) 378-9484 Fax: (360) 378-9485 email: commins@interisland.net

Swartz and Kulpa Engineers, Inc.

17632 Irvine Blvd, Suite 250
Tustin, CA 92780
Ph (714)832-4513
Fax (714)832-4570

1471 Southgate, Suite D
Gardnerville, NV 89410
Ph (775)782-0146
Fax (775)782-0153

Mr Brian Gerber S.E.
ICC Evaluation Service, Inc.
5360 Workman Mill Road
Whittier, CA 90601

Subject: AC-130, 322 and 154

Dear Mr. Gerber

We have reviewed the 12/3/07 letters written by Mr. Commins of Commins Manufacturing to both Brian Gerber and Kurt Stochlia of ICC Evaluations Services.

Empirical values are presented that precisely quantify the amount of tie down slack due to looseness, misfit and vertical shrinkage that will occur in light gage steel, manufactured wood, and sawn lumber. We believe that these values are exaggerated. In general, any such numbers, presented without substantiation should be suspect. In this specific instance, our design firm has extensive experience in dealing with shrinkage concerns in the design of brittle stone veneer finishes. We acknowledge that sawn lumber has shrinkage issues with respect to cross sectional dimensions. This is particularly true of floor joists and, to a lesser extent, of top and bottom plates. Shortening of vertical wall studs, due to shrinkage, is never a significant issue. With regard to manufactured lumber, shrinkage, is not a significant concern. If the amount of vertical shrinkage (3/8" for manufactured lumber) reported by Mr Commins actually occurred, many of the brittle veneer finishes we design would experience significant cracking. This has not been the case.

The reported 1/8" of shortening due to looseness in light gage steel structures does not occur in practice. Being involved in the light gage steel industry for more than 25 years, we have extensive light gage steel design experience. We have designed and engineered everything from single family residences to multi-unit multi-story complexes, from manufacturing aspects to design and forensic study. The only effect we have seen is the relaxation of diagonal flat strap bracing on buildings four stories and taller. This is due to the settlement of the framing members into the rolled tracks as the dead load of the structure is stacked above. It is a common general note to require re-tightening of the diagonal flat straps prior to installation of the wall sheathing. In any case, this is entirely dealt with during construction. In our experience, flat sheet or board shear products are not affected by settlement of light gage steel framed structures.

There appears to be no backup for his claims of strength reductions other than his opinion. Mr. Commins does not appear to be a licensed professional engineer, and we are not aware of his qualifications or design experience. Where is the evidence or testing that shows such dramatic reductions? Mr. Commins fails to provide any hard data to back his claims. Statements such as “Most finished buildings have many loose panels” are extreme and untrue in our experience.

In his letter, Mr. Commins uses an example based on a shear wall with a 9.5:1 aspect ratio (on a second story wall?). This would clearly be an extreme and unusual case. By applying his unsubstantiated “What If” values to this wall, he attempts to show that shrinkage compensators should be used on all shear wall structures. Looking at more realistic examples with more realistic shrinkage values would do little to support his argument.

When evaluating building materials, any relaxation of the holdown devices, and the corresponding effect on the strength properties of a shear wall, should be demonstrated and proved with rigorous testing. Merely making a statement and presenting an argument does not prove the point.

Respectfully

[signed]

Allan J. Swartz P.E.
Swartz and Kulpa Engineering Inc.

[signed]

Gregory Kulpa P.E.
Swartz and Kulpa Engineering Inc.

Market Support Engineering

January 23, 2008

Kurt Stochlia, P.E.
ICC Evaluation Service, Inc.
5360 Workman Mill Road
Whittier, CA 90601-2298

RE: Agenda Item MISC 1 (AC130/AC322) Input

Dear Kurt:

We have reviewed the letters from Commins Manufacturing related to this agenda item. It is difficult to comment on the documents as submitted. In our opinion, the letters are based on the assumption that prefabricated shear-resisting assemblies are expected to perform precisely in the same manner in the installed building as they do in the laboratory qualification testing. While Mr. Commins raises an interesting question, it is our opinion that the same question should be posed for all types of construction rather than focusing on an individual, isolated, component in a much larger structure. Do any full-building assemblies perform as modeled based on idealize engineering assumptions or based on laboratory testing? Probably not. What does the limited amount of full-structure testing indicate? The answer, at least for low-rise wood-frame buildings, is that the full-building resistance is significantly BETTER than assumed by engineering models. Does this necessarily extend to seismic performance in "slack" systems? Maybe. Maybe not. In either case, we believe that it is premature to single out prefabricated systems for imposition of the proposed (and onerous) requirement that they be tested under the unusual condition of introducing arbitrary assumed slack into the system prior to testing.

Thank you and the ES Committee for your consideration of our comments.

Sincerely,

David S. Gromala (via e-mail)

David S. Gromala, P.E.
Director of Codes & Product Acceptance

Weyerhaeuser Technology Center, WTC 2B2
P.O. Box 9777, Federal Way, WA 98063-9777
Phone: (253) 924-6499 ; Fax: (253) 924-4239
E-mail: dave.gromala@weyerhaeuser.com