



AMERICAN FOREST & PAPER ASSOCIATION

American Wood Council
Engineered and Traditional Wood Products

October 6, 2008

Mahmut Ekenel, Ph.D., P.E.
Staff Engineer
ICC Evaluation Service, Inc.

Re: Proposed Revisions to the Acceptance Criteria for Thin-shell, Cementitious-coated, Cold-formed Steel Stud Wall Panels, Subject AC282-1008-R1 (ME/RK)

Dear Mahmut:

Below are comments on AC282:

a) Add ASTM E2126 to list of reference standards to coordinate with new Section 4.4.2:

1.3 Codes and Reference Standards:

.....

1.3.X ASTM E 2126-07, Standard Test Methods for Cyclic (Reversed) Load Test for Shear Resistance of Walls for Buildings, ASTM International.

b) Revise Section 3.2.1 to clarify that applicable height limits and seismic coefficients for use in Seismic Design Categories A and B or in Seismic Design Categories A through D are based on those given for Item A.14 of ASCE 7 (Bearing wall system, Light-frame walls with shear panels of all other materials).

3.2.1 General: Evidence of compliance ...

For panels justified for axial, transverse and racking shear loads under Sections 3.2.2.1.1, 3.2.2.3.1 and 3.2.2.2, respectively, the wall panels will be recognized for use as shear walls ~~under~~ in Seismic Design Categories A and B, with building height limits and Seismic Design Coefficients (R , C_d , and Ω) as noted for Item A.14 of ASCE 7, Table 12.2-1.

For panels justified for axial, transverse and racking shear loads under Sections 3.2.2.1.2, 3.2.2.3.2 and 3.2.2.2, respectively, the wall panels will be recognized for use as shear walls ~~under~~ in Seismic Design Categories A through D, with building height ~~limitations~~ and Seismic Design Coefficients (R , C_d , and Ω) as noted for Item A.14 of ASCE 7, Table 12.2-1.

The following requirements...

Thank you for the opportunity to comment.

Sincerely,
Philip Line, P.E.
Senior Manager, Engineering Research



Date: October 7th, 2008

Mahmut Ekenel
Senior Evaluation Specialist
ICC Evaluation Service, Inc.
5360 Workman Mill Road
Whittier, CA 90601

Mr. Ekenel:

I have reviewed the proposed modifications to AC282 on the agenda for the October 2008 Evaluation Committee hearing and submit the following comments for consideration:

- I would like to further discuss and get clarification regarding why consideration of transverse (out-of-plane) composite action affects use in Seismic Design Categories (Methods 1 and 2 in Section 6.2; wording in Section 3.2.2.3.2). While I agree that composite action should not be considered for axial loads on studs (although bracing for stability should be OK) if the wall is being used as a shear wall, out-of-plane loads as would be imposed by wind are never required to be combined with in-plane seismic (or wind) loads. Therefore, I feel that consideration of composite action for transverse loading should not limit seismic use (Seismic Design Categories) of the walls. Further, I would like to see an allowance for the designer to calculate transverse stud capacities using transformed section properties of the concrete and steel stud.
- Please clarify the meaning of the first sentences of Sections 3.2.2.1.2 and 3.2.2.3.2. What are the “qualification provisions”?
- The first paragraph of Section 4.7.1 states “Care should be taken to avoid connections of the lath to members that are parallel to the span of lath-reinforced cementitious coating, where the height-to-width ratio of the transverse load specimen is less than 2:1”. I believe this means that the dimension of the test panel in the direction parallel to the studs must be at least twice the stud spacing (or 4 feet as stated earlier in the paragraph), but would like clarification.
- Are there any specific requirements for the loading methods used for Section 4.7?

In addition, I will submit further comments related to seismic factors and shear walls by the end of the week after receiving feedback from consultants.

Thank you for your consideration of these issues. I look forward to further discussions at the hearings.

Best Regards,

A handwritten signature in black ink, appearing to read "Stephen Jirsa". The signature is written in a cursive, flowing style with a prominent initial "S".

Stephen Jirsa
Director of Engineering
Ecolite Concrete



October 6, 2008

Mahmut Ekenel
Staff Engineer
ICC Evaluation Service
5360 Workman Mill Road
Whittier, CA 90601

RE: Proposed Revisions to the Acceptance Criteria for Thin-shell, Cementitious-coated, Cold-formed Steel Stud Wall Panels, Subject AC282-1008-R1

Dear Dr. Ekenel,

Thank you for the opportunity to comment on the proposed revisions to *AC 282: Acceptance Criteria for Thin-Shell, Cementitious-Coated Cold-Formed Steel Stud Wall Panels*.

The proposed revisions would permit these systems to be used as a lateral force resisting system in high-seismic areas, provided that they are cyclically tested and subject to the building height limitations noted for Item A.14 of ASCE-07 Table 12.2.1. As only the height limits for Item A.14 systems are referenced, it is not clear what the proposed seismic coefficients are for these systems or how they should be determined. No requirement has been provided for these lateral force resisting systems to rationalize assigned seismic coefficients either through equivalency or other means.

In light of recent discussions with other acceptance criteria, we believe that the rationalization of seismic coefficients should be considered. At a minimum, AC282 systems should be held to the seismic design coefficients assigned to Item A.14 of ASCE-07 Table 12.2.1 ($R=2$, $C_d=2$, $W_0=2.5$). This could be achieved with the following proposed revisions:

Section 3.2.1, proposed 3rd paragraph:

“...the wall panels will be recognized for use as shear walls under Seismic Design Categories A through D, with seismic design coefficients and building height limitations as noted for Item A.14 of ASCE7 Table 12.2.1: “Light-framed walls with shear panels of all other materials.””

Section 6.2:

“...to Seismic Design Categories A through D, if Method 2 of Sections 3.2.2.1.2 and 3.2.2.3.2 is used, with seismic design coefficients and building height limitations as noted for Item A.14 of ASCE7 Table 12.2.1: “Light-framed walls with shear panels of all other materials.””

Thank you for consideration of these comments. If you have any questions regarding these comments please don't hesitate to contact me at 208-429-3715 or at Daniel.Cheney2@Weyerhaeuser.com

Sincerely,

Daniel W. Cheney (sent via e-mail)

Daniel W. Cheney, P.E.
Manager of Product Acceptance



October 7, 2008

Mahmut Ekenel, Ph.D, P.E.
Staff Engineer
ICC Evaluation Service, Inc.
Los Angeles Business/Regional Office
5360 Workman Mill Road
Whittier, CA 90601

Subject: ICC-ES Proposed Revisions to AC282 Entitled "Thin-shell, Cementitious-coated, Cold-formed Steel Stud Wall Panels, Subject AC282-1008-R1"

Dear Mr. Ekenel,

ICC-ES AC282 Section 3.2.1 states that these panels will be recognized in SDC A through D with the building height limits noted in A14 of ASCE7-05 Table 12-12.1 This acceptance criteria (AC) should clarify that an R factor of 2 be used as this is a thin plaster shear wall on cold-formed steel framing. This would be in line with plaster shear walls.

The load rating in this AC is a mix between the old ICC-ES AC130 and new AC130. It has a load rating methodology, per the old AC, for strength and drift only, but incorporates some of the new AC provisions (factor of safety of 2.0 for wind and 2.5 for seismic, the h/180 drift limit for wind, etc). However, it does not include the equivalency parameters which one might argue is unnecessary with an R equal to 2. In addition, whereas site built plaster shear walls are limited to a 2:1 aspect ratio (AR), this AC would permit AR's up to 4:1.

The justification for the aforementioned items appears to be that testing by the applicant will be performed. However, it may not be enough to perform simple testing for strength and displacement as justification for the use of these panels in SDC C and D even with an R equal to 2. Would a site built plaster wall ever be permitted with a 4:1 AR if tests for strength and drift are performed? It does not seem that this would be permitted and, if not, then it should not be permitted in this AC.

Please contact me at jellis@strongtie.com or call me at 714-738-2029 with your response as soon as possible or with any questions or comments you may have.

Sincerely,
Simpson Strong-Tie Co., Inc.

A handwritten signature in black ink that reads "Jeff Ellis".

Jeff Ellis, P.E., S.E.
Senior Engineering Project Manager

dw/RA