

8



17645 Juniper Path, Suite 260 Lakeville, MN 55044
P 952 892 0809 F 952 892 0811

September 25, 2009

Peter Bahlo
ICC Evaluation Service, Inc.
Los Angeles Business/Regional Office
5360 Workman Mill Road
Whittier, CA 90601

RECEIVED

OCT - 6 2009

ICC-ES Evaluation Committee

Dear Mr. Bahlo,

I am writing with additional support information concerning the "Proposed Revisions to the Acceptance Criteria for Sandwich Panels, Subject AC04-1009-R1 (PB/RK)" dated September 1, 2009.

In support of the revisions, AFM Corporation is providing results of cyclical shear testing conducted by APA on our R-Control SIPs.

The testing was conducted on a conventionally framed shear wall and an R-Control SIP shear wall. The OSB and fastening is identical between the two assemblies. The variable investigated during this testing is the removal of the intermediate lumber member in the SIP assembly as compared to the conventional shear wall.

As can be seen by a review of the hysteresis curves, the performance of the R-Control SIP assembly and the conventional shear wall are nearly identical.

Sincerely,

Todd Bergstrom, Ph.D.
V.P. Technology



www.foam-control.com
www.geofoam.com

CONTROL,
NOT COMPROMISE

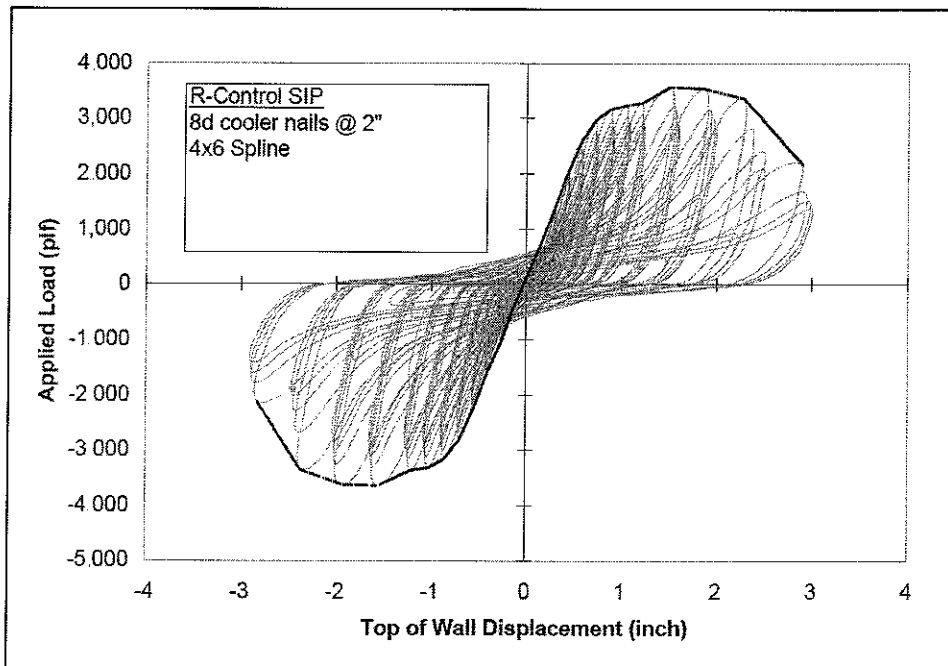
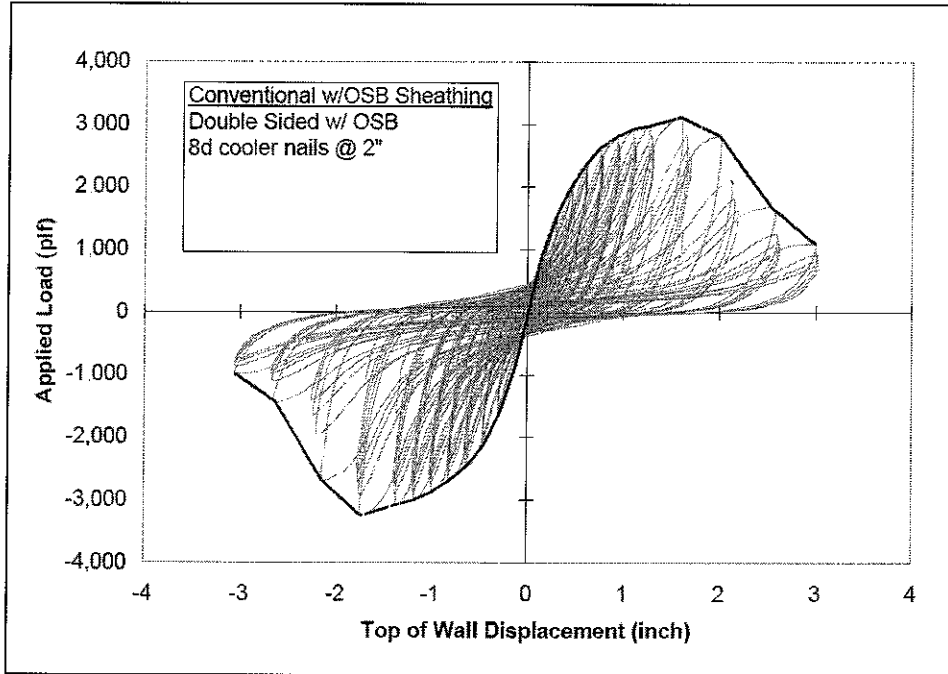


www.r-control.com



17645 Juniper Path, Suite 260 Lakeville, MN 55044
P 952 892 0809 F 952 892 0811

Figure 1

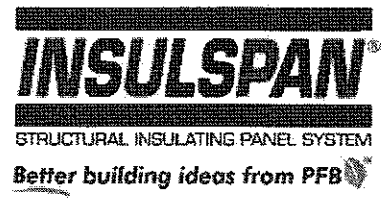


www.foam-control.com
www.geofoam.com

CONTROL,
NOT COMPROMISE



www.r-control.com



September 25, 2009

Peter Bahlo, P.E.
Senior Staff Engineer
ICC Evaluation Service, Inc
5360 Workman Mill Road
Whittier, CA 90601 United States

RECEIVED

OCT - 6 2009

ICC ES Evaluation Committee

Re: Proposed Revisions to the Acceptance Criteria for Sandwich Panels
Subject AC04-1009-R1 (PB/RK)

Mr. Bahlo,

Insulspan would like to provide the following additional supporting information related to the proposed revisions to AC04, Acceptance Criteria for Sandwich Panels.

We wish to confirm that Insulspan has conducted cyclic (reversed) load tests at APA – The Engineered Wood Association (APA) to evaluate the performance of Insulspan SIP shear wall assemblies for use in all Seismic Design Categories. The tests were performed using Structural Engineers Association of Southern California (SEAOSC), Standard Method of Cyclic (Reversed) Test for Shear Resistance of Framed Walls for Buildings, (revised January 20, 1997) which is based upon the Sequential Phased Displacement (SPD) loading protocol.

The test program included testing of Insulspan SIP shear wall assemblies and matched light-frame (conventional) walls sheathed with wood-based structural panels for comparison. The conventional walls were constructed using the same nail spacing and bottom plate/end post (boundary) configuration as the SIP shear wall assemblies. The interior framing members for the conventional walls matched the SIP panel to panel connections, but were spaced at 24" (610 mm) on center.

"Backbone" curves were extracted from the test data. The backbone curve was used to compare the Insulspan SIP shear wall assemblies to the matched conventional shear walls by comparing the load versus deflection performance of the walls. The attached Figure 1 provides a sample backbone curve for one of the SIP shear wall configurations tested. Figure 2 provides a sample curve for the matched conventional shear wall. As can be seen, the performance of the Insulspan SIP shear wall assembly versus the matched conventional shear wall assembly was essentially the same.

Should you have any questions regarding my comments, please contact me at your convenience

Sincerely,

Jim Whalen, P. Eng.
Technical Marketing Manager
Insulspan Incorporated

Proposed Revisions to the Acceptance Criteria for Sandwich Panels
Subject AC04-1009-R1 (PB/RK)

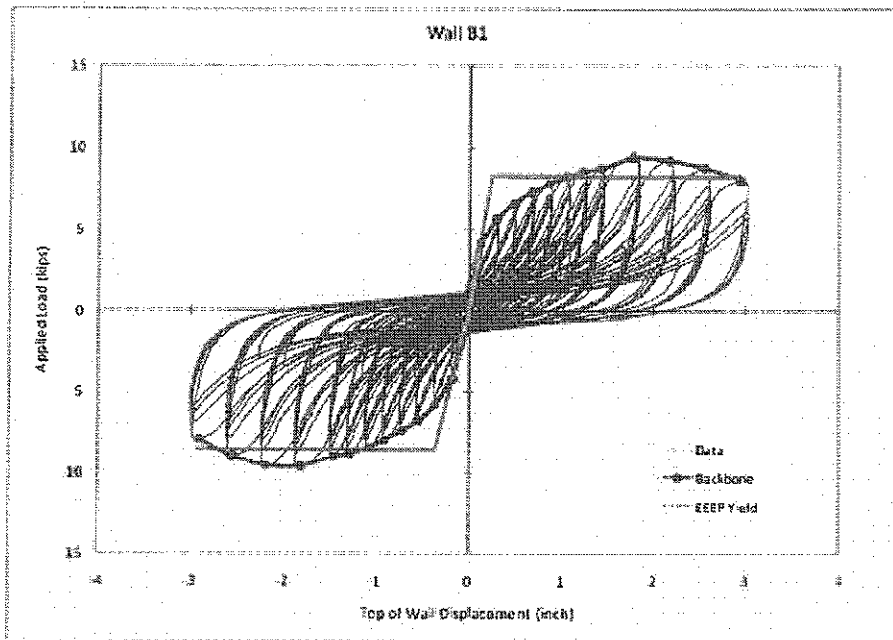


Figure 1 - SIP Shear Wall Assembly

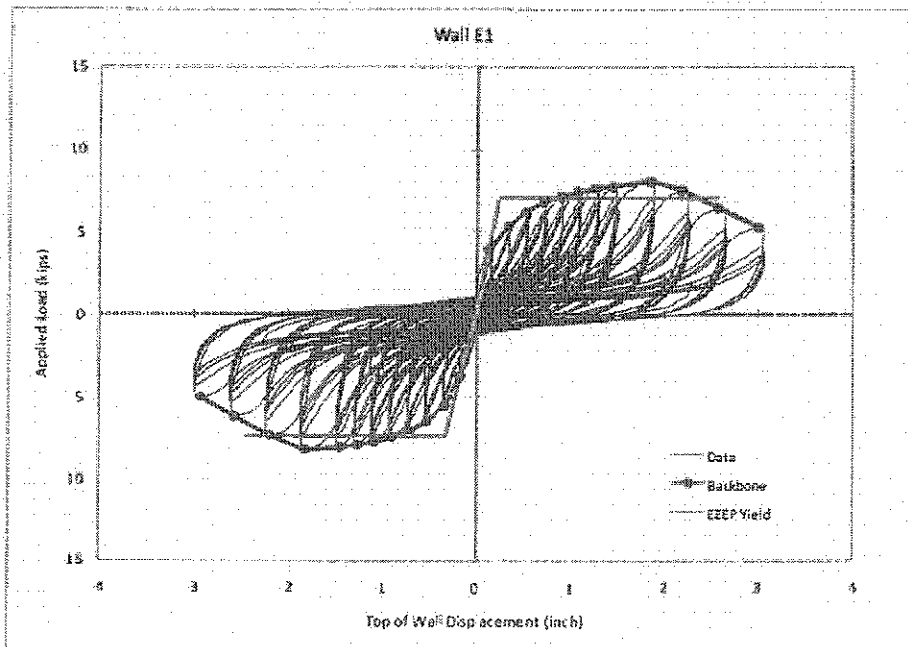


Figure 2 - Matched Light-Frame Shear Wall

8



September 25, 2009

Peter Bahlo, P.E.
ICC Evaluation Services, Inc.
Los Angeles Business/Regional Office
5360 Workman Mill Road
Whittier, CA 90601

RECEIVED

OCT - 6 2009

ICC-ES Evaluation Committee

Dear Mr Bahlo:

This letter is in response to ICC-ES's "Proposed Revision to the Acceptance Criteria for Sandwich Panels, Subject AC04-1009-R1". Premier Building Systems would like to provide the attached additional supporting information.

During the summer of 2007, the APA conducted comparative cyclic shear wall tests for Premier Building Systems. The comparative testing was conducted on a 2x4 stick framed shear wall with 7/16" OSB on both sides of the wall and a 4 1/2" PBS SIP wall without sealant or SIP Tape on the panel joints.

The walls were tested following the Sequential Phase Displacement (SPD) protocol. The hysteretic response of the walls can be seen in the attached Figures 3 and 4. The hysteretic plots show a backbone curve, as well as an equivalent energy elastic-plastic (EEEP) curve, as defined by ASTM E2126. The curves shown in Figures 3 and 4 are nearly identical.

Sincerely,

Joseph G. Pasma, PE
PBS Technical Manager

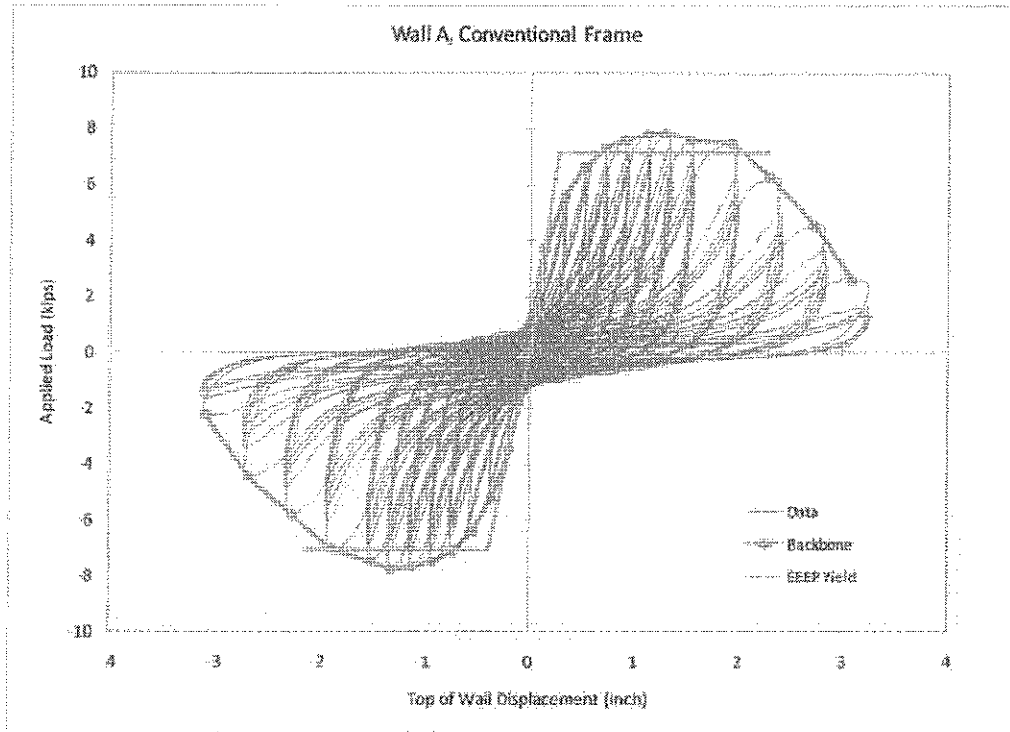


Figure 3. Cyclic response for conventionally framed wall.

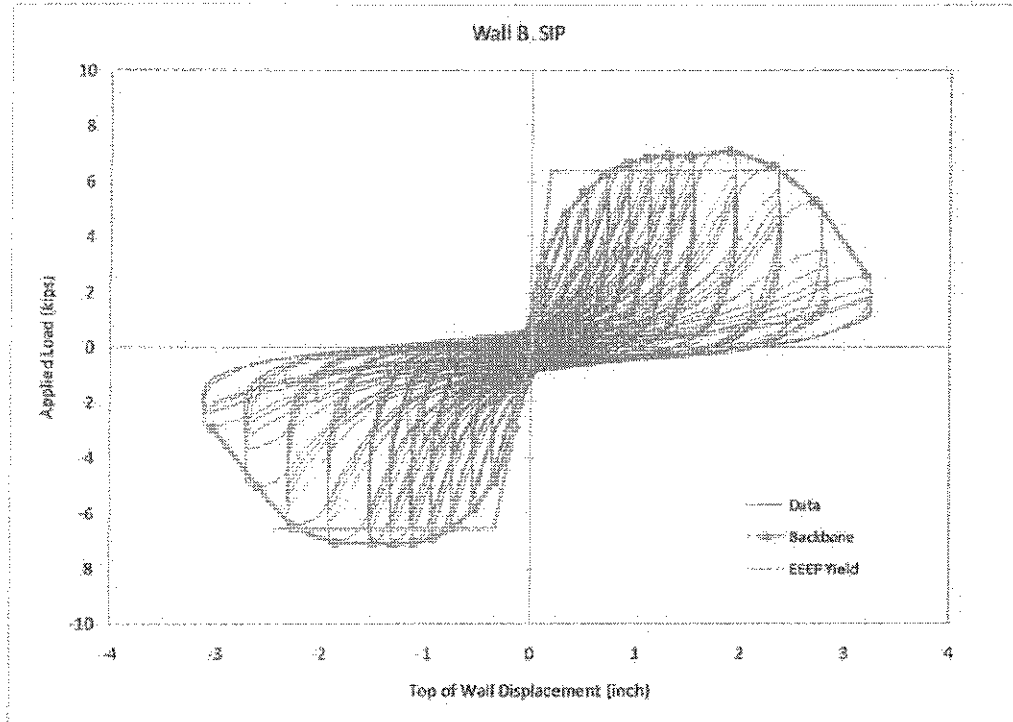


Figure 4. Cyclic response for SIP's wall.



Seismology Committee

October 5, 2009

RECEIVED

OCT - 6 2009

ICC-ES Evaluation Committee

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

Re: Comments on the proposed changes to ICC-ES AC04.

Dear Brian

At our September 23, 2009 meeting Mr. Nick Horeczko of your office noted that a hearing will be held for the proposed changes to AC04, and invited comments by our committee. The Light Frame Subcommittee was charged with the task of spearheading this effort in concert with the SEAOC Evaluation Reports committee. The group has generated a number of comments in light of the short time frame which are presented below. Please accept the comments as a result of a joint effort between the SEAOC Seismology and SEAOC Evaluation Reports Committees.

In essence we share the concerns raised by ICC-ES staff as follows:

- a) Section 4.6 Roof and Floor Panels; contains no provisions for the panels to be used as lateral load resisting diaphragms. We believe that a statement shall be added to prohibit the use of it in this manner. If they are intended to be used to resist lateral loads, then the panels should be tested for this purpose. It is our concern that the lateral load path issues have not been adequately considered and addressed, in particular the connection of the roof panels to the wall panels and collectors.
- b) Section A1.3.5:- Plywood or other similar splines should specifically not be allowed since the resulting energy dissipation in the fasteners is different from a typical plywood shear wall.
- c) Section A2.1.1 of Appendix A of the AC indicates that shear wall assembly A is the same as a typical wood shear wall, however, without a figure, it is not possible to determine this. Additionally, the use of glue between the wood panels and the polystyrene may change the characteristics of the assembly from that of a typical shear wall. Unless it can be established that gluing the sheathing to the foam does not change the performance of the wall, we recommend that tests be required for all assemblies.
- d) Section A2.2: Load bearing wall assemblies with studs spaced more than 24 inches on center need to provide a mechanism, other than the sheathing to distribute the vertical loads to the vertical wood members.
- e) Section A3.2 of Appendix A of the AC appears to be similar to AC130. The approach taken in Section A3.3 is limited to systems that are similar to those considered when developing ICC-ES AC130. Because there are concerns that some assemblies (B, C, and E) are sufficiently different from the typical plywood shear wall we recommend that they be evaluated using the FEMA P695 (ATC-63) methodology.



Seismology Committee

In general we recommend that in the future the FEMA P695 methodology be used as the basis for evaluation where seismic design factors are defined. The FEMA P695 methodology has been endorsed by SEAOC Seismology Committee.

We trust you find these comments beneficial

Sincerely

SEAOC Seismology Committee;

Mehran Pourzanjani S.E
Chair of the Seismology Committee