



April 28, 2008

**TO: PARTIES INTERESTED IN SEISMIC ISSUES COVERED IN ICC-ES EVALUATION REPORTS**

**SUBJECT: ICC-ES Staff Memorandum Dated April 1, 2008, Misc 1 on the April 2008 Alternative Criteria Process Agenda, Subject MISC1-0508-R1 (KS/BG)**

**Hearing Information:**

Friday, May 30, 2008

8:00 a.m.

**Sheraton Gateway Suites Chicago O'Hare Airport**

6501 North Mannheim Road

Rosemont, Illinois 60018

(847) 699-6300

Dear Madam or Sir:

Enclosed is the subject staff memorandum. The memorandum was placed on the April alternative criteria process agenda to provide additional time for interested parties to submit comments. It is staff's intent to review the comments received (in response to both the April staff memo and this letter) and to prepare a second memorandum, summarizing the comments, for consideration at the hearing noted above. The staff memo to the committee along with comments received from interested parties will be posted on our web site prior to the hearing.

It should also be noted that several other criteria, covering specific products, will follow this item on the hearing agenda. The criteria attempt to address the issues in the April staff memo. The discussion on this miscellaneous item should provide some direction for ICC-ES staff regarding seismic issues in the acceptance criteria for the specific products.

You are cordially invited to submit written comments on agenda items, or to attend the Evaluation Committee hearing and present verbal comments. If you wish to contribute to the hearing, please note the following:

1. Written comments that are received by the Los Angeles business/regional office by **May 14, 2008**, will be forwarded to the committee prior to the hearing, and will be posted on the ICC-ES web site shortly after the comment deadline.
2. Written comments received up to ten days before the meeting, and staff memos responding to comments, will be posted to the web site on **May 23, 2008**.
3. ICC-ES is no longer providing printed copies at the meeting of proposed acceptance criteria, staff memos or public comments. These documents will be available on a limited

number of CDs at the meeting, for uploading to computers; and ICC-ES will make arrangements with the hotel business center to have hard copies available for photocopying.

4. Written comments that miss the deadline noted in item (1), above, will only be available at the meeting if you provide 35 copies, collated, stapled, and three-hole punched, either at the meeting itself or to the Los Angeles business/regional office by **May 23, 2008**.
5. If you plan to speak for more than 15 minutes, or offer a visual presentation lasting longer, you should notify ICC-ES staff as far as possible in advance. There will be a computer, projector, and screen available at the meeting for anyone wishing to make a visual presentation, and presentations in most cases will need to be in PowerPoint format. Also, ICC-ES will need to be provided with your presentation at least a half-hour before the start of the relevant meeting session (morning or afternoon) on either a CD or a flash card.
6. If you have any special needs related to a presentation, you should contact ICC-ES staff well in advance of the meeting.
7. Any visual aids for viewing at committee meetings (charts, overhead transparencies, slides, videos, electronic presentations, etc.) will be permitted only if a copy is provided to ICC-ES, before the presentation, in a medium that can be retained with other records of the meeting.
8. Any materials submitted for committee consideration are considered nonconfidential and available for public discussion, as noted in Section 2.7 of the ICC-ES Rules of Procedure for the Evaluation Committee.
9. Prior to the meeting, you should refrain from trying to communicate directly with committee members about agenda items, either verbally or in writing. Committee members reserve the right to refuse such communications.

Your cooperation with these guidelines is much appreciated, as is your interest in the deliberations of the Evaluation Committee. If you have any questions, please contact the undersigned at (800) 423-6587, extension 3783. You may also reach us by e-mail at [es@icc-es.org](mailto:es@icc-es.org).

Yours very truly,



Kurt Stochlia  
Vice-President External Operations

KS/gh

Enclosures

cc: Evaluation Committee



## ICC EVALUATION SERVICE, INC., RULES OF PROCEDURE FOR THE EVALUATION COMMITTEE

### 1.0 PURPOSE

The purpose of the Evaluation Committee is to monitor the work of ICC-ES, in issuing evaluation reports; to evaluate and approve acceptance criteria on which evaluation reports may be based; and to sponsor related changes in the applicable codes.

### 2.0 MEETINGS

**2.1** The Evaluation Committee shall schedule meetings that are open to the public in discharging its duties under Section 1, subject to Section 3.

**2.2** All scheduled meetings shall be publicly announced.

**2.3** Two-thirds ( $\frac{2}{3}$ ) of the voting Evaluation Committee members shall constitute a quorum. A majority vote of members present is required on any action.

**2.4** In the absence of the nonvoting chairman-moderator, Evaluation Committee members present shall elect an alternate chairman from the committee for that meeting. The alternate chairman shall be counted as a voting committee member for purposes of maintaining a committee quorum and to cast a tie-breaking vote of the committee.

**2.5** Minutes of the meetings shall be kept.

**2.6** An electronic audio record of meetings shall be made by ICC-ES; no other audio, video, electronic or stenographic recordings of the meetings will be permitted. Visual aids (including, but not limited to, charts, overhead transparencies, slides, videos, or presentation software) viewed at meetings shall be permitted only if the presenter provides ICC-ES before presentation with a copy of the visual aid in a medium which can be retained by ICC-ES with its record of the meeting and which can also be provided to interested parties requesting a copy. A copy of the ICC-ES recording of the meeting and such visual aids, if any, will be available to interested parties upon written request made to ICC-ES together with a payment as required by ICC-ES to cover costs of preparation and duplication of the copy. These materials will be available beginning five days after the conclusion of the meeting but will no longer be available after one year from the conclusion of the meeting.

**2.7** Parties interested in the deliberations of the committee should refrain from communicating, whether in writing or verbally, with committee members regarding agenda items. All written communications and submissions regarding agenda items should be delivered to ICC-ES. All such written communications and submissions shall be considered nonconfidential and available for discussion in open session of an Evaluation Committee meeting, and shall be delivered at least ten days before the scheduled Evaluation Committee meeting if they are to be forwarded to the committee. Materials delivered to ICC-ES at least ten

days before the scheduled meeting will be posted on the ICC-ES web site ([www.icc-es.org](http://www.icc-es.org)) prior to the meeting. After this time, parties wishing to submit materials for consideration by the Evaluation Committee must deliver a sufficient number of copies as directed by ICC-ES. Consideration of materials not received by ICC-ES at least ten days before the meeting is at the discretion of the Evaluation Committee. Following the meeting, ICC-ES will make all materials considered by the Evaluation Committee available on the web site for a maximum period of one year following the meeting. The committee reserves the right to refuse recognition of communications which do not comply with the provisions of this section.

### 3.0 CLOSED SESSIONS

Evaluation Committee meetings shall be open except that the chairman may call for a closed session to seek advice of counsel.

### 4.0 ACCEPTANCE CRITERIA

**4.1** Acceptance criteria are established by the committee to provide a basis for issuing ICC-ES evaluation reports on products and systems under codes referenced in Section 2.0 of the Rules of Procedure for Evaluation Reports. They also clarify conditions of acceptance for products and systems specifically regulated by the codes.

Acceptance criteria may involve a product, material, method of construction, or service. Consideration of any acceptance criteria must be in conjunction with a current and valid application for an ICC-ES evaluation report, an existing ICC-ES evaluation report, or as otherwise determined by the Evaluation Committee.

#### 4.2 Procedure:

**4.2.1** Proposed acceptance criteria shall be developed by the ICC-ES staff and discussed in open session with the Evaluation Committee during a scheduled meeting, except as permitted in Section 5.0 of these rules.

**4.2.2** Proposed acceptance criteria shall be available to interested parties at least 30 days before discussion at the committee meeting.

**4.2.3** The committee shall be informed of all pertinent written communications received by ICC-ES.

**4.2.4** Attendees at Evaluation Committee meetings shall have the opportunity to speak on acceptance criteria listed on the meeting agenda, to provide information to committee members.

**4.3** Approval of acceptance criteria shall be as specified in Section 2.3 of these rules.

**4.4** Actions of the Evaluation Committee may be

appealed in accordance with the ICC-ES Rules of Procedure for Appeal of Acceptance Criteria or the ICC-ES Rules of Procedure for Appeals of Evaluation Committee Technical Decisions.

#### **5.0 COMMITTEE BALLOTING FOR ACCEPTANCE CRITERIA**

**5.1** Acceptance criteria may be issued without a public hearing following a 30-day public comment period and a majority vote for approval by the Evaluation Committee when, in the opinion of ICC-ES staff, one or more of the following conditions have been met:

1. The subject is nonstructural, does not involve life safety, and is addressed in nationally recognized standards or generally accepted industry standards.
2. The subject is a revision to an existing acceptance criteria that requires a formal action by the Evaluation Committee, and public comments raised were resolved by staff with commenters fully informed.
3. Other acceptance criteria and/or the code provide precedence for the revised criteria.

**5.2** Negative votes must be based upon one or more of the following, for the ballots to be considered valid and require resolution:

- a. *Lack of clarity:* There is insufficient explanation of the scope of the acceptance criteria or insufficient description of the intended use of the product or system; or the acceptance criteria is so unclear as to be unacceptable. (The areas where greater clarity is required must be specifically identified.)
- b. *Insufficiency:* The criteria is insufficient for proper evaluation of the product or system. (The provisions of the criteria that are in question must be specifically identified.)
- c. *The subject of the acceptance criteria is not within the scope of the applicable codes:* A report issued by ICC-ES is intended to provide a basis for approval under the codes. If the subject of the acceptance criteria is not regulated by the codes, there is no basis for issuing a report, or a criteria. (Specifics must be provided concerning the inapplicability of the code.)

d. *The subject of the acceptance criteria needs to be discussed in a public hearings.* The committee member requests additional input from other committee members, staff or industry.

**5.3** An Evaluation Committee member, in voting on an acceptance criteria, may only cast the following ballots:

- Approved
- Approved with Comments
- Negative: Do Not Proceed

#### **6.0 COMMITTEE COMMUNICATION**

Direct communication between committee members, and between committee members and an applicant or concerned party, with regard to the processing of a particular acceptance criteria or evaluation report shall take place only in a public hearing of the Evaluation Committee. Accordingly:

**6.1** Committee members receiving an electronic ballot should respond only to the sender (staff). Committee members who wish to discuss a particular matter with other committee members, before reaching a decision, should ballot accordingly and bring the matter to the attention of ICC-ES staff, so the issue can be placed on the agenda of a future committee meeting.

**6.2** Committee members who are contacted by an applicant or concerned party on a particular matter that will be brought to the committee will refrain from private communication and will encourage the applicant or concerned party to forward their concerns through the ICC-ES staff in writing, and/or make their concerns known by addressing the committee at a public hearing, so that their concerns can receive the attention of all committee members. ■

*Effective March 18, 2008*



**To:** Parties Interested in Seismic Issues in ICC-ES Evaluation Reports

**From:** ICC-ES Staff

**Date:** April 1, 2008

**Subject:** Status of Seismic Issues Relating to Lateral-Force-Resisting  
Products Covered in ICC-ES Evaluation Service Reports (ESRs)

**MEMO**

The purpose of this memo is to continue the discussion and solicit input on how to approach the assignment of seismic design coefficients and factors to proprietary lateral-force-resisting (LFR) products. Over the last several years the ICC-ES staff, with significant help from interested parties, has attempted to address issues involving proprietary LFR elements in ESRs. ICC-ES appreciates the help provided by them. The work has led to some success in the development of several criteria (AC130 and AC322) which contain seismic considerations for proprietary LFR elements used in light-frame wood stud and cold-formed steel stud construction, and AC215 which covers the establishment of seismic design coefficients and factors for autoclaved aerated concrete (AAC) structural systems.

AC130 and AC322 criteria involve the assignment of a specific seismic design coefficient ( $R = 6.5$ ) and corresponding factors to proprietary LFR elements based on an “element equivalency” approach. AC215 involves the establishment of seismic design coefficients and factors based a system approach. Both approaches require some form of cyclic testing and analysis of data.

Although the “element equivalency” approach works well for AC130 and AC322 (light-frame wood stud and cold-formed steel stud) when the LFR element complies with the parameters for a system where  $R = 6.5$ , it does not appear feasible to use this approach for other types of seismic-force-resisting products. The “element equivalency” approach is based on a comparison of the performance of the proprietary seismic-force-resisting element to a code element which is part of a defined ( $R = 6.5$ ) seismic-force-resisting system. The approach requires a reasonably sized data base for a proper comparison and assumes the proprietary seismic-force-resisting element can replace a code complying element in the defined seismic system. This concept does not carry over to a single element from a proprietary seismic-force-resisting system tested to define the seismic characteristic of the entire system. We also need to consider the situation in which the proprietary LFR element to be used with light-frame wood stud and cold-formed steel stud construction does not comply with the requirements noted in AC130 and AC322 for an  $R = 6.5$ . An approach similar to that described in AC215 or ATC-63 appears to be more appropriate.

Other seismic-force-resisting products that need consideration for the establishment of seismic design coefficients and factors are insulated concrete forms (ICF), mortarless CMU construction, EPS-wire-shotcrete construction, several concrete products such as proprietary prefabricated concrete wall and foundation panels (including ACC wall panels), polymer-resin type products (wall, floor and roof shell construction) and sandwich panels. One approach may not be appropriate for all these different types of products but the seismic considerations that need to be addressed are similar. We are aware of the concept noted in Section 1629.2 of the 1997 UBC regarding undefined structural systems. However, at this time we are unaware of a method to measure and apply all the items noted in an equitable manner to various seismic-force-resisting products.

There have been many changes and ideas exchanged with regards to basic seismic considerations between the time of issuance of evaluation reports under the 1997 UBC and 2000 IBC and the current 2006 IBC. A question has been raised as to why ICC-ES makes such a distinction between the requirements in issuing ICC-ES evaluation reports under the 2003 IBC and the 2006 IBC with regards to seismic considerations. In the past most evaluation reports have been silent with regard to assigning specific seismic design coefficient and factors (seismic zones under the UBC) to proprietary seismic-force-resisting elements. We have accepted comments from report holders that sufficient data and information will be submitted to the local building department for each project verifying that the specific seismic design coefficient and factors utilized in the design of the structure, using the proprietary seismic-force-resisting elements, are appropriate and comply with the code. Based on our experience over the last few years with the initial development of AC 215, AC130 and more recently with the development of AC322 and changes to AC130, we have found that the assigning of appropriate seismic design coefficient and factors to proprietary seismic-force-resisting elements or systems is a very complicated and difficult task. When we asked how this is being accomplished we were discouraged by the answers. There did not seem to be a logical approach to the assignment of specific seismic design coefficient and factors to proprietary seismic-force-resisting elements or systems, especially when there was no appropriate cyclic test data. It is our viewpoint that a rigorous approach that involves both cyclic testing and an acceptable method of analysis are needed to determine the appropriate coefficients and factors.

We are soliciting information on the approach we should pursue for the establishment of seismic design coefficients and factors to be assigned to the various proprietary seismic-force-resisting products. Since this project will take some time, a question has been raised as to what ICC-ES will do until these issues are resolved. To help with our decision ICC-ES is soliciting input regarding a conservative approach that could be used in the interim, which would allow compliance with the 2006 IBC; such as limiting the

proprietary seismic-force-resisting products to one or two stories, assuming an  $R = 2$ , limiting to use in SDC A and B and/or requiring cyclic testing with the cyclic test data included in an evaluation report so that an engineer has appropriate information to make a determination as to the appropriate seismic design coefficient and factors to use with the proprietary seismic-force-resisting products within a building system.

We intend to take the information received in response to this memo to the ICC-ES Evaluation Committee hearing in Chicago the last week in May 2008. Additional information regarding the meeting is available on our web site [www.icc-es.org](http://www.icc-es.org).

Please direct all correspondence to Brian Gerber, S.E. ([bgerber@icc-es.org](mailto:bgerber@icc-es.org)) or Kurt Stochlia, P.E. ([kstochlia@icc-es.org](mailto:kstochlia@icc-es.org)). Mail can be sent to the address noted in this memo.