

ACI 374 Committee Meeting

Performance-Based Seismic Design of Concrete Buildings

Fall Convention 2016
Monday October 24th
8:30 AM to 12:00 PM
Liberty Ballroom C
Philadelphia, PA

Meeting Minutes [DRAFT]

Total Number of Attendees: (45)

Members Present: (28)

Bonacci, Brena, Brienen, Cleland, Correal Daza, Dragovich, Ferzli, Fields, Garcia, Hagen, Hueste, Kehoe, Kim, Lepage, Matamoros, Mottor, Pantelides, Rodriguez, Saatcioglu, Sasani, Satter, Shin, Shiohara, Stark, Tessem, Xia, Yanez

Members Absent: (10)

Celestino, Hassan, LaFave, Panagiotou, Pincheira, Rautenberg, Restrepo, Saavedra, Santana, Sheikh

Members Excused: (3)

Aschheim, Ibarra, Wallace

Associate Members Present: (2)

Birely, Carillo

Visitors Present: (15)

Alfaro, Dutrisac, Ghannoum, Guerrero, Hoehler, Holmberg, Limantoro, Lopez, Lubell, Monge, Murillo, Nahlawi, Salas, Sokoli, Villegos

1. Welcome and Introductions [8:38 AM] – **All**
 - a. IT issues precluded starting on time [8:30 AM].
2. Approval of Minutes from the Milwaukee Meeting – **All**
 - a. Motion: Matamoros / Second: Kehoe.
3. Approval of Meeting Agenda – **All**
 - a. Motion: Matamoros / Second: Kehoe.
4. Membership Updates – **Dragovich**
 - a. The Chairman updated the membership status.
 - b. New voting member: Siamak Sattar, PhD (NIST).
 - c. Membership: (41) voting, (3) consulting, (46) associate.
5. Update and Future Work: “ACI 374.3R-16: Guide to Nonlinear Modeling Parameters for Earthquake-Resistant Structures” – **Kim/Hagen**

- a. The ACI 374.3R-16 document was published by ACI just prior to the fall 2016 convention.
- b. Kim noted that ACI 318 has formed a new subcommittee “Nonlinear Dynamic Analysis” that 374.3 should be updated to provide input to and potentially be a reference document to 318.
- c. Kim/Hagen presented the next steps and tasks for future updates to 374.3
- d. Nahlawi (ACI Staff): to publish with ACI 318-19, the draft document should be submitted to TAC by fall 2018. Kim agreed that goal can be reached.
- e. Kim provided a presentation of the current document, with tasks and current volunteers indicated. The presentation is available on the committee website with an updated volunteer list, also indicated below. The updated tasks and new volunteer list with new business comments (see presentation notes online for specific details):
 - i. Example
 1. Prepare draft examples by spring 2017 – **Hagen**.
 - ii. Coupling beam modeling parameters
 1. New volunteers: **Motter, Brena** (Brena has a database of coupline beam tests that he can contribute).
 2. Brienen noted that these modeling parameters need to be adjusted from what are in ASCE 41 for new construction.
 3. Dragovich commented that the acceptance criteria should be based on the modeling parameters so tackling both is not that difficult.
 4. Hagen pointed out that all of the values in the 374.3 document that were derived from test data also have standard deviation that can assist in the development of modeling parameters.
 5. Report the available test specimens by spring 2017 – **Hagen**
 - a. The committee noted that it would be good to differentiate between diagonal, conventional, SFRC, etc. type coupling beam test result counts.
 - iii. Expected concrete and reinforcing bar strength
 1. All: Need to move to expected material strengths to match up with ACI 318-N.
 2. **Rodriguez**
 - a. Perhaps design for $2x f'c$ at 10 year after construction.
 - b. He will present next convention on concrete material properties for PBSB.
 3. **Matamoros** to participate and has information on expected material properties for reinforcement.
 - iv. Clarification that modeling parameters in ASCE 41-13 were based on experimental data or engineering judgement
 1. **Kim** will report at the next convention.
 - v. Effective stiffness
 1. Matamoros noted that the effective stiffness for service vs MCE analysis may be an issue, nonlinear vs linear analysis effective stiffness not the same and nonlinear effective stiffness is captured by the model.
 2. **Matamoros, Rodriguez** and **Hagan** will also participate in the effort.
 - vi. Special RC moment frames
 1. Beam test results are lacking
 - a. **Matamoros and Sasani** to report at the next convention.
 - vii. Special RC walls

1. Dragovich asked the question whether squat walls were important. Hagen noted yes.
 2. Pujol has a potential database of wall test data.
 3. **Sattar and Birely** to participate in the effort.
 - viii. Diaphragms and trusses
 1. It was noted that diaphragms are generally force controlled except for PC diaphragms. The committee agreed for now to defer reference to existing publications on this work.
 - ix. Special PC moment frames
 - x. Foundations
 - xi. Not designed as part of the lateral system
 - xii. Intermediate and Ordinary systems
 1. **Sasani** will participate.
6. Updates and Ballot 1 Resolutions: ITG-4.3R-07 to ACI 374 document “Report on Structural Design and Detailing for High-Strength Concrete in Moderate to High Seismic Applications” – **Ibarra/Pantelides**
- a. Pantelides:
 - i. Discussed about future ballot schedule. Many chapters would be balloted in around 11/2016.
 - ii. Presented resolution for ballot comments.
 - iii. Would provide Bonacci and Rodriguez draft with resolutions of their comments.
 - b. Discussion about necessity of Reballot - **Hueste, Brena, Matamoros**. New technical changes to address negative votes would require a reballot.
 - c. Matamoros moved to accept the changes presented by Pantelides regarding the removal of a reference (editorial change), and Brena seconded. A quorum was present: (*Affirmative: 20, No: 0, Abstain: 1*), motion passed - reference removed.
 - d. Schedule
 - i. Chapter 4 done.
 - ii. Chapter 5 after spring meeting.
 - iii. Chapter 6 ballot before spring meeting.
 - iv. Chapter 7 going out right after the convention.
 - v. Chapter 9: Confer with **Motter** about updates.
7. Updates and Future Work: ACI 374.1 “Acceptance Criteria for Moment Frames Based on Structural Testing and Commentary” coordination with ACI Committee 550 – **Cleland**
- a. Cleland reported updates on ACI 550 activities and the updated draft document would be reviewed by 374 task group.
 - b. Cleland: the draft document would be provided to 374 members shortly after convention.
 - c. The chairman suggested to form a subcommittee for review of the documents including ACI 374.1 and ITG 5.1 and 5.2.
 - i. Potential committee membership overlap between ACI 550 and 374:
 1. 550: Sennout, Hawkins.
 2. 374: Rodriguez, Motter, Kim.
 - d. **Cleland**: draft updates to the document will be available by *fall 2018*.
8. Updates and Future Work: 374.2 “Guide for Testing Reinforced Concrete Structural Elements under Slowly Applied Simulated Seismic Loads” – **Saatcioglu/Pantelides**
- a. Saatcioglu summarized the current document and potential revisions. Presentations attached.

- b. The chairman commented that review different loading protocols discussed in ATC 114.
 - c. Kehoe commented that ASCE41- 17 should be adopted.
 - d. Kim commented that drift limits in the new building PBD guidelines should be added.
 - e. The chairman suggested to form a task group.
- 9. Update: "Summary of PBSB Guideline Documents" – Dragovich**
- a. The Chairman provided updates on status of the summary document. The document is ready and the method for posting ACI website would be determined with ACI staff.
- 10. Presentation: "How PBD Modeling Biases Impact your Design" – Ferzli**
- a. Ferzli provided a practitioners perspective on tall building PBSB.
- 11. Technical Sessions and Special Publication for the Fall 2017 "Performance-Based Seismic Design of RC Buildings: State of the Practice" at the Anaheim CA Convention fall 2017 – Dragovich/All**
- a. The chairman provided updates on the sessions.
 - i. The SP will be available at the fall 2017 convention. Requires that it be completed ready for ACI staff by July 15 2017.
 - ii. There will be (3) two-hour special sessions.
 - iii. All abstracts received/due just before this convention.
 - iv. Final session request will occur right after the convention which should put us in line for our preferred time slots: (2) Monday PM, (1) Tuesday AM.
 - v. Dragovich noted that it is expected that all committee members will participate in the special publication paper reviews.
 - b. Brena volunteered as a coordinator for the session.
- 12. Update: RC Walls with PBSB – Wallace**
- a. Wallace was unable to present due to an excused conflict.
- 13. Discussion: "Future Committee Work" –**
- a. The committee agreed that there is sufficient work and focus based on the previously presented topics during the meeting: Updates to ACI 374.1 – 3 along with supporting ACI 318-N.
- 14. Presentation: "Low Cycle Fatigue in Type II Mechanical Bar Splices" – Cleland**
- a. Cleland stated that what is presented is based on an original PowerPoint by Aragon and Kurama from Notre Dame: Type III splice.
 - b. Presentation slides are available on the committee website.
- 15. New Business Presentation: "Design and Construction on Steel Fiber Reinforced Coupling Beams" – Ferzli**
- 16. Adjournment [12:00 PM] – Dragovich**
- a. Motion: Cleland, Second: Kehoe.