

**318 Sub D**  
ACI Spring Convention  
Tampa Marriott Waterside Hotel & Marina  
Tampa, Fl

<b>Monday, April 4, 2011</b>	<b>10:00 AM – 1:00 PM</b>	<b>Marriott – Meeting Room 11</b>
<b>Tuesday, April 5, 2011</b>	<b>8:00 AM – 12:30 PM</b>	<b>Marriott – Meeting Room 8</b>

**Minutes**

**1. Call to order and welcome**

Chair Frosch called the meeting to order, welcoming both members and guests.

**2. Introductions**

The committee chair requested that each member and guest introduce themselves.

Members in attendance:

Frosch (chair), Bertero, Bommer, Browning, Garcia, Ghosh, Klemencic, Mlakar, Parra-Montesinos, Pincheira, Saiidi, Santana, Taylor, Salmon (consulting), Zeisler (ACI Staff)

Visitors in attendance:

Akthem Al-Manaseer, Jenn-Chuan Chen, Mark Cukrov, Sebastian Delgado, David Fields, John P Hughes, Mahmoud Amara, Ryan Jenkins, Tony Liu, Chungwook Sim, Shamim Sheikh, Raymond Wang, Nadim Wehbe, Mike Wesson

**3. Approval of minutes**

A motion to approve the minutes of the Fall 2010 meeting was made and seconded. The minutes were approved by unanimous voice vote.

**4. 441E Presentation – Interlocking Spirals**

A presentation was made by Shamim Sheik and Tony Liu on behalf of Committee 441E regarding interlocking spirals. They provided a summary of the issues that were faced in earlier balloting of commentary language to provide guidance regarding the selection of  $\rho$  for interlocking spirals. Committee 441E felt that one of the main problems was the reference to 10.10.1.

Based on the discussion, several issues were identified. First, 10.10.1 should be considered for deletion. The provision is not conservative, and it is not clear why this provision is ever needed. Second, the previous commentary balloted was not clear. What is intended is that  $\rho_s$  is calculated using Equation 10-5 for the entire shape where the gross area is for the entire column and the core area is for the shape inside the outermost spirals. This calculated  $\rho_s$  is the required value. The  $\rho_s$  provided for each spiral (considering that spiral as an individual using the area inside of it) should be equal to or greater than the required value. Future code/commentary language needs to clearly indicate the difference between the required and provided  $\rho_s$ . It was suggested to order the provision similar to the design procedure by presenting the required value first and then sizing the individual spirals. **ACI 441E will develop a revised proposal for consideration by 318D.**

## 5. 318-11 – Response to Public Comments

Responses to public comment were balloted by the main committee (LB11-2). Sub D was responsible for handling comments 178-184 which received several comments and negatives. There were two sets of comments which were handled separately.

Items 178-180. Two references were being updated. The SDI noncomposite deck standard was being updated from the 2006 to 2010 version, and the SDI handbook was being updated from version 30 to 31. It was questioned if the changes in these references were reviewed. Sub D reviewed the references for changes and concluded that there were no changes in the design of the slab. Therefore, it was felt that these references should be updated. This response was indicated in response to all commenters. No changes were required in the response to public comment.

Item 183. It was requested to indicate if this item regarding transmission of column loads through the floor system was going to be treated as new business. The item was reviewed and deemed not required as it is currently covered by the code. The response to public comment was appropriately modified to indicate this fact.

All responses to the public comment were unanimously approved by the subcommittee.

## 6. Chapter 11 - One Way Slabs

The chapter on one-way slabs was balloted by the main committee (LB11-1). The chapter received approximately six pages of comments. The subcommittee worked line-by-line on revising the chapter in response to the comments. It was a very productive meeting in which the entire chapter was discussed, and revisions were made. The chapter will be finalized after the meeting and submitted for a shortened review by the subcommittee such that it can be included in the next main committee ballot (LB11-3).

One item that had significant discussion was regarding a suggestion of increasing the limit on  $\epsilon_t$  from 0.004 to 0.005. After considerable discussion, it was felt that this is new business. There are many implications of this change that need to be thoroughly considered. In addition, there was discussion that the value of the limit as well as the tension controlled limit may require adjustment for alternate grades of reinforcement such as Grade 80. Perhaps these should be a function of  $\epsilon_y$ . Therefore, the next ballot of the one-way slab chapter will not include a vote to change the limit. **A task group of Jose Pincheira and Guillermo Santana was formed to look further into this issue and provide recommendations for a future code change.**

## 7. Chapter 13 – Beams

During the next few weeks, the beam chapter will be fully developed using the one-way slab chapter as a roadmap. JoAnn Browning volunteered to assist in this effort. This chapter is scheduled for a first round of main committee balloting in early May (LB11-3). Due to time constraints, it is not clear if this chapter can be balloted by Sub D. However, it will be sent out to the subcommittee for comments as soon as possible.

## **8. Chapter 14 – Columns**

Following completion of the beam chapter, the column chapter will be developed using the roadmap provided by the one-way slab and beam chapters. This chapter is currently scheduled for first round balloting on LB11-4.

## **9. Chapter 25 - Plain Concrete**

This chapter has been balloted by the main committee (LB10-4). JoAnn Browning has worked on revising the chapter based on the comments. While this work is well along, it is essential that the member based chapters continue to move forward. Following work on the beam chapter, the plain concrete will be finalized for a second ballot by the main committee.

## **10. New Business**

### ***a. Minimum Reinforcement***

Allan Bommer provided a presentation regarding the unification of minimum reinforcement requirements. The general consensus of the committee was that we should continue to move forward with this change proposal. It was suggested that unification should be provided with a provision for beams and perhaps a separate one that includes a reduction for slabs (similar to the current provision where slabs are provided a reduced minimum). There was a general feeling that while the general procedure would be provided for all sections, a “deemed to satisfy” expression for rectangular beams should be maintained. It was recommended that examples of rectangular and T-beams be developed to illustrate how to use the provisions. Examples are especially important for T-beams since various definitions could be used to define the T. Furthermore, these examples are needed to illustrate the differences provided from current practice.

### ***b. Live Load Arrangement***

Sub D previously balloted and approved extension of the live load arrangement provisions provided by the equivalent frame method for general slab analysis. This proposal was sent to Sub C as they are handling these provisions in the reorganized code.

### ***c. $\phi$ Limits and Transition***

Jose Pincheira provided a brief presentation regarding some irregularities that are encountered in the axial-moment interaction of T and C shaped shear walls. The interaction curve illustrated was from a building in Chile. Strange design curves can be provided due to the  $\phi$  transition from compression to tension-controlled especially for irregular cross-sections when the balanced point occurs above the bulb (maximum moment) of the curve. This discussion tied in with the previous discussion regarding the tension-controlled limit. Jose plans to update the committee further regarding this issue.

## **11. Adjourn**

The meeting was adjourned at 12:30 pm.