

**ACI 362 - PARKING STRUCTURES  
Minutes of Meeting**

**Phoenix, Arizona**

**October 21, 2013**

**LIST OF ATTENDEES**

<u>MEMBERS</u>	<u>ASSOCIATE MEMBERS</u>	<u>VISITORS</u>
Erich Martz, Chair Jim Donnelly, Secretary Kurt Wagner Carl Walker Tony Kojundic Ned Cleland Boris Dragunsky Mohammed Iqbal Rashid Ahmed Harry Gleich Prakash Surali Tom Downs	Paul Brien Larry Church Brian Pulver Jeff Adams Terry McDonald Matthew Hansen Don Kline	Carl Schneeman Joe Ferzli Laurence E. Kaiser Don Weiss Matthew Huslig Gary Klein Richard Huza Greg Zeisler

**1.0 CALL TO ORDER**

Chairman Erich Martz called the meeting to order at 1:05 p.m, and welcomed all attendees.

**2.0 ATTENDANCE**

Meeting attendees briefly introduced themselves. A sign-in sheet was passed around. Those in attendance for all or part of the meeting are listed above.

**3.0 PRESENTATION TO COMMITTEE - PCI SPANDREL BEAM RESEARCH**

Gary Klein of Wiss, Janney, Elstner Assovciates, Inc. (WJE) made a presentation regarding the PCI spandrel beam research project that WJE is doing with NC State. This research project is intended to evaluate the torsional behavior of eccentrically loaded spandrel beams that are common in precast parking garage construction. Mr. Klein described the torsional stresses encountered in a typical spandrel beam. Sixteen beam specimens have been tested in this research project, 12 of which were loaded to failure. The capacity of the beams from this testing are approximately 70% higher than the calculated capacity. As a result, an alternate procedure for the analysis of simple span spandrel beams was developed and has now been approved by 318.

**4.0 APPROVAL OF SPRING 2013 MINUTES**

A motion was made by Harry Gleich and seconded by Rashid Ahmed to approve the Minneapolis, Minnesota meeting minutes. The minutes were approved by unanimous voice vote.

**5.0 SESSIONS AT FALL 2013 CONVENTION**

Chairman Erich Martz announced that the two sessions for the Fall 2013 Convention were being held the day after this meeting in Room C-212A. Chairman Martz briefly summarized the speakers for

each session, and indicated that all presentations had been loaded. As a result, everything should be ready for tomorrow's sessions.

## **6.0 MAINTENANCE DOCUMENT SUBCOMMITTEE STATUS UPDATE**

The status of the revision of the Maintenance Document based on the discussion during the subcommittee meeting on the previous day was summarized for the committee, and is given below:

- Chapters 2 and 3 - Deterioration Associated with Parking Structures (Pulver) and Protection Systems (Pulver): Chapter needs final revisions and figures so that document can be balloted by the committee.
- Chapter 4 - General Maintenance Considerations (Downs): This chapter has been drafted, and will be submitted to the subcommittee for preliminary review.
- Chapter 5 - Developing a Maintenance Program (Wagner/D'Arcy): Most of the time in yesterday's subcommittee meeting was spent reviewing this chapter, which is now in good condition. This chapter only requires minor revisions, renumbering, and the addition of some text from Chapter 3.
- Chapter 6 - Service Life and Resiliency (Church): This chapter is being worked on by Larry Church.

Chairman Martz stated that the chapters would be balloted individually in order to keep the process moving and to minimize the size of each ballot. He also stated that the chapters could be balloted in two main balloting periods, one before the Spring 2014 meeting (Chapters 2, 3, and 5) and the other before the Fall 2014 meeting (Chapters 4, 6, and 1). This would keep the document on track to be wrapped up in the next 3 years.

Larry Church mentioned that the repair code was rejected by IBC. That code, once approved, and ACI 364 and 562 are raising the bar for code requirements for repairs. He stated that this may result in needing to add more specifics to the maintenance requirements.

## **7.0 SUPPLEMENTAL CEMENTITIOUS MATERIALS TASK GROUP STATUS UPDATE**

The Chairman of this task group, Tony Kojundic, briefly summarized the status of the Tech Note regarding the use of supplemental cementitious materials in parking garage construction. Tony Kojundic indicated that he had received text for a case study involving the use of involving the use of slag in lieu of portland cement from Mark Luther. This text will be combined with the text prepared to date and forwarded to the task group. Mr. Kojundic said that he would discuss a third case study (involving the use of supplemental cementitious materials in a precast parking structure) with Harry Gleich, who had previously volunteered to develop this case study.

## **8.0 PROTECTIVE SURFACE TREATMENTS TASK GROUP STATUS UPDATE**

The status of the work of this task group was briefly summarized. No progress has been made on this Tech Note since the last meeting. Authors are needed for the various portions of this Tech Note. Secretary Donnelly had sent the approved outline to the task group a week ago to get volunteer authors.

It was discussed how the outline should be updated to include sealers, or the title changed to membranes. A motion was made by Harry Gleich and seconded by Jim Donnelly to change the title

of the Tech Note to “Waterproofing Membrane Systems in Parking Structures”. This motion was approved 10 to 1. The negative vote was from Mo Iqbal, who stated that a waterproofing membrane is a surface treatment. After some discussion about how the title should be consistent with the other ACI 362 documents, a motion was made by Erich Martz and seconded by Harry Gleich to revise the title to “Surface Treatments in Parking Structures - Waterproofing Membranes”. This will enable the production of subsequent tech notes. This motion was approved 10 to 0.

Mo Iqbal indicated that he could not continue to be the Chairman of this task group. Carl Walker indicated that he could be the new chairman as long as Mr. Iqbal remained on the task group.

## **9.0 DURABILITY TASK GROUP STATUS UPDATE**

There was no report from this task group. The work of this task group is tabled until it is determined how to proceed.

## **10.0 FUTURE PRESENTATIONS TO COMMITTEE**

Topics previously mentioned as appropriate for possible future presentations to the committee (vehicle barrier design, load distribution in double-tee beam flanges, rapid-cycle construction) will be presented during the committee-sponsored sessions tomorrow. Ned Cleland mentioned that load distribution in double-tee beam flanges would only be partially covered in his presentation.

Mo Iqbal expressed concern that issues remain regarding vehicle barrier design that should be addressed by the committee, particularly upturned walls that fail by hinging at the wall/slab intersection. This issue will be described in detail during his presentation tomorrow. Mo Iqbal agreed to give a presentation on this topic to the committee in Reno.

Harry Gleich mentioned that diaphragms in precast garages would be a good topic, with a major code change forthcoming in ASCE led by S.K. Ghosh. Also, ACI 550 is developing two documents on the topic for precast structures. It was agreed that this presentation would be best once these documents were completed.

## **11.0 PCI GARAGES COMMITTEE**

Harry Gleich indicated that the updated PCI manual had been balloted, and that PCI was in the process of addressing negatives, so progress was being made, but it was not completed yet. Updated information will be included regarding spandrel beams as discussed in Gary Klein’s presentation and load distribution in double-tee beam flanges.

## **12.0 OLD BUSINESS**

There was no old business.

## **13.0 NEW BUSINESS**

Carl Walker brought up the recently revised ACI 362.1R-12 - Guide for the Design and Construction of Durable Concrete Parking Structures, and questioned whether it is required by code or if it was an indication of the standard of care for the industry. It was discussed that, since it is not a code or a standard, it is not required by ACI 318, but that it is a part of the standard of care. Concern was expressed that many engineers don’t know that this document exists, so they don’t follow it. It was also discussed that, if it isn’t followed, there may be potential issues with durability, and without

making it a standard or a code, there was no incentive to follow it. Greg Ziesler said that the committee could submit a request to TAC to make it a code or standard, but that it would likely get rejected.

#### **14.0 NEXT MEETING**

Reno, Nevada (Spring 2014 Convention):

- Monday, March 24, 2014 – 1:00 p.m. to 5:00 pm (Main Committee)
- Sunday, March 23, 2014 – 1:00 p.m. to 4:00 p.m. (Subcommittee Meeting)

#### **15.0 ADJOURN**

A motion to adjourn was made by Harry Gleich, seconded by Boris Dragunsky, and approved by the full committee. The meeting adjourned at 3:15 p.m.