

ACI Committee 522 – Pervious Concrete

Minutes of the Fall meeting, Pittsburgh, October 26, 2010

The following members/visitors were in attendance:

Members: Carlos Aire, William Arent, William Brant, Heather Brown, Omkar Deo, Scott Erickson, Dale Fisher, Walt Flood, Mel Galinat, Bruce Glaspy, Dan Huffman, John Kevern, John Luciano, Darmavan Ludirdja, Allyn Luke, Luis Mata, David Mitchell, Jeremy Montgomery, Narayanan Neithalath, Mathew Offenber, Oon-soo Ooi, Tom Rozsits, George Seegebrecht, Jeff Speck, Diep Tu, Chris Tull, Robert Varner, Charles Weiss

Visitors: Srinivas Allena, Randy Butcher, BJ Eckholdte, Clarissa Ferraris (TAC contact), Susanne Flood, MR Hansen, David Hollingsworth, Joe Hug, Wayne Kawano, Joe Kelley, Frank Kozeliski, Michael Mahoney, Bill Ulrich, John Vaughan, Rick Yelton

1. Chairman Offenber called the meeting to order at 8.28 AM, and welcomed the members and visitors
2. A motion to approve the minutes of minutes of the Spring 2010 Chicago meeting was put forward by George Seegebrecht and seconded by John Kevern. The motion passed unanimously.
3. Chair Offenber provided a membership overview. ACI is interested in increasing the voting membership of the committee. A few of the associate members are being elevated to the voting member status.
4. Research subcommittee report – Some of the interesting work in pervious concrete research were reported.

Liv Haselbach reported (through e-mail) about some of the recent funding that has been obtained for titanium dioxide applications to pervious concrete for potential environmental benefits alongside roadways and also some funding to analyze with finite element analysis stress development at the interface of pervious and other pavements.

John Kevern reported about a project to develop more contractor friendly mixes - constructed 20 field test sections to evaluate various construction effects on surface durability. Part of the study includes SCC pervious designed not to require curing under plastic. In addition, UMKC, FHWA, and Missouri DOT are constructing and instrumenting a two-lift concrete highway pavement containing a photocatalytic cement. Part of the project will include photocatalytic pervious highway shoulder. Water quality, air quality, and urban heat island effects will be looked at. The section is scheduled for construction next spring.

Mel Galinat reported about the tests carried out on the use of fibers in pervious concrete. The use of fibers increases the void content, and sand can be used to reduce this void content to the desired porosity, thereby increasing the strength.

Scott Erickson reported about a cleaning process using water jet that has been working very well with pervious concretes. The clogged pervious concretes were found in the field to return to well performing systems after this treatment.

Neithalath reported on some of the material design methods that are under study that uses the particle packing methods to proportion pervious concretes. A presentation in the open paper session (Tuesday PM) by Omkar Deo and Neithalath will feature this design methodology. Omkar gave an overview of the design method for the benefit of the committee.

5. SP Review – Dr. Heather Brown provided an update on the SP to be published as part of the two-part session on leading edge of pervious concrete. Currently, papers are expected to be received during May of 2011 for publication of the SP before the Fall 2011 convention.
6. Neithalath provided an overview of the upcoming technical session that is planned for Dallas convention in 2012. Since ASTM will have a pervious concrete symposium in December 2011, it is felt that a session in Fall 2012 would be appropriate. The session(s) will focus on Material Design, Performance, and test methods so as to incorporate a broad spectrum of the advances in pervious concretes. The papers will be invited from authors ahead of time so that a SP can be brought out during the convention in which the session is planned itself.
7. Core thickness task group – Mr. Chris Tull and Bruce Glaspy provided an update on the core thickness task group. The issue is with core thickness of pervious concretes on open-graded subbases. Mr Tull agreed to provide a recommendation on specifying core thickness measurement to the 522.1 task group by 1/1/11.
8. 522 R revision report – John Kevern is leading the task group for the revision of 522 R, which is slated to be released sometime in 2013/2014. He has 3 members volunteered for the committee already and was looking for a few more. Chair Offenbergs requested the interested members to get in touch with John Kevern. Five more members of the committee joined as members in this task group. The members of this task group are Kevern, Tull, Glaspy, Mata, Neithalath, Rozsits, Erickson, Flood, Brown, and Arent.
9. Standard details – Mr. Diep Tu presented on some of the modifications to standard details. There were discussions on the curb and drain related issues with pervious concrete parking lots. The recommendations made during the discussions in the committee will be incorporated by Mr. Tu in the standard details to be posted on the committee website by 11/30/10.
10. 522.1 – Specification – Revision – Matt Offenbergs reported on the revision of the pervious concrete specification 522.1.
11. Coordinating committee reports
  - a) 330 – Robert Varner reported that the committee is updating the 330.1 specification and still working on the first version of the guide for designing industrial pavements.
  - b) 130 – Dan Huffman reported on the activities of committee 130 –Sustainability as well as NRMCA’s pervious promotion subcommittee. It is anticipated that the federal guidelines on maintaining the temperature in constructed parking lots would facilitate the promotion of pervious concretes. The NRMCA promotion sub-committee met during Concrete works in Nashville. Low impact design and the importance of pervious concrete in LID was discussed.
  - c) NRMCA pervious contractor certification – There were discussions as to the updated certification program. The text has been significantly revised, along with the training materials. The NRMCA committee recommends to ACI 522 to remove the wording in 522.1 to accept 5 technicians as qualified to place pervious without supervision.
  - d) ASTM – Matt Offenbergs reported about the ASTM standards that are in development. The standard on hardened voids content and density has a draft that has been published. The flexural test task group has not been active, and Chair asked if anyone is interested in leading the task group. Bruce Glaspy is interested and will head up the activities of the flexural test standard activities. Heather Brown reported that ASTM is organizing a pervious concrete session in Tampa in December 2011 as part of ASTM meeting. They have received only 2 abstracts, but the abstract deadline is sometime in spring. ACI 522 members are requested to submit abstracts to this session if they have interesting results on standards and standard test methods.

- e) ASCE- John Kevern reported about the ASCE activities involving pervious concretes. He is working on the committee that is authoring a document for ASCE on sustainable pavements which will be available sometime next year. Dr. Manoj Chopra leads the task group writing the chapter on pervious concrete.

12. New Business

- a) UFGS specification – Mr. Charles Weiss reported on the Unified Facilities Guide Specifications (UFGS) which is a joint effort of the U.S. Army Corps of Engineers (USACE), the Naval Facilities Engineering Command (NAVFAC), the Office of the Air Force Civil Engineer and the National Aeronautics and Space Administration (NASA). UFGS are for use in specifying construction for the military services. There is a section on pervious concretes for roads and site facilities
- b) Test Methods – Frank Kozeliski – Mr. Kozeliski provided some easy to use test methods for the hardened voids content of pervious concretes. He also showed some results of tests carried out using this method. Some maturity measurements in pervious concrete pavements in Gallup, NM were also shown.
- c) Perv Master’s Roast – Mr. David Mitchell reported on the informal pervious concrete testing program he hosted in Las Vegas.

13. Next meeting will be held at Marriott Tampa waterside and Westin in April 2011.

14. A motion to adjourn the meeting was raised by Scott Erickson and seconded by John Kevern. The meeting was adjourned at 10.32 AM.