



Technical Advisory Committee Minutes (10/14/03)

Jim Grove, Center for PCC Pavement Technology

TPF-5(066) Material and Construction Optimization for Prevention of Premature Pavement Distress in PCC Pavements

Purpose of Project: To develop optimal mix design and test methods for monitoring Key performance parameters and conduct demonstration tests in participating states.
<http://www.ctre.iastate.edu/pccpoolfund/>

ATTENDEES

Youlanda Kay Belew	Indiana DOT	Jim Grove	PCC Center
Jason Blomberg	Missouri DOT	Halil Ceylan	ISU
Tom Bold	North Dakota DOT	Scott Schlorholtz	ISU
Michael Brinkman	New York DOT	Marcia Brink	CTRE
Dan DeGraaf	MI Concrete Paving Assoc	Dale Harrington	PCC Center
Max Grogg	FHWA - Iowa Division	Tom Cackler	PCC Center
Todd Hanson	Iowa DOT	Kejin Wang	ISU
Darin Hodges	South Dakota DOT	Vern Schaefer	ISU
Dan Johnston	South Dakota DOT	Rob Rassmussen	Transtec
Sandra Larson	Iowa DOT	Maurico Ruiz	Transtec
Jim Page	Georgia DOT		
James Parry	Wisconsin DOT		
Bob Risser	MI Concrete Paving Assoc		
Joe Schroer	Missouri DOT		
Doug Schwartz	Minnesota DOT		
Gordon Smith	IA Concrete Paving Assoc		
Shannon Sweitzer	North Carolina DOT		
Jerry Voigt	ACPA		
John Wojakowski	Kansas DOT		
George Woolstrum	Nebraska DOR		

INTRODUCTIONS

Tom Cackler opened the meeting and attendees introduced themselves.

STATE DATA COLLECTION

To date, Jim has visited five states. A visit to two more states is scheduled for the end of the month. Jim felt the visits have been very worthwhile with good exchanges at each visit. He asked if any of the representatives from those states already visited had any comments for improving the time spent but no comments were offered. A list of visits completed and those scheduled will be put on the web site.

MOBILE LAB TRAILER

Jim described the efforts so far toward acquiring a mobile lab trailer. He and a former Iowa DOT technician traveled to FHWA's Turner-Fairbanks lab to look at a surplus semi-trailer the FHWA has and would give us. Unfortunately it was set up as a classroom with expandable sides and mounting lab equipment would not work. Tom and Jim then visited Featherlite in Cresco, Iowa. They could build a trailer to our specifications. A fifth wheel type seems like the best option; a one-ton truck that would be available for transportation while at the site would pull it. Leif Wathne (FHWA) and Greg Barger (Ash

Grove Cement) have helped develop a list of specific needs for the trailer. Currently the detailed design and specifications are being developed and we hope a trailer can be ordered in the next few weeks.

DEMONSTRATION PROJECTS

It was suggested that a link be created on the web site to give information about the demonstration projects. Jim will do that. In discussion about possible projects for next summer, Jim noted that Missouri had two projects not far across the border that would be handy, especially as the first project. He will keep in touch with Jason Blomberg regarding the scheduling. During the visit to North Dakota, three projects near Fargo that also would be relatively close and may work this summer were discussed. Other states that will look for possible projects for next summer are Wisconsin, Indiana, Michigan, Nebraska, and Kansas. Timing and coordination will determine how many can be accomplished during the next construction season.

There was a suggestion that we should have a senior management presentation for each DOT when we go to the state for the demo project.

The possibility of the states' personnel doing some additional sampling was discussed. This may allow the mobile lab time to move on to another project that could be about to start. Dan DeGraaf mentioned investigating 1077 lab certification for the trailer. John Wojakowski told of training Kansas has for lab personnel. It was pointed out that we need to make sure the people doing the tests are certified. It was suggested we should look for projects where the contractor is interested in quality work.

We need to consider the "what if's" that could arise during the demo projects. Consider how we will handle the situation where we discover a problem. Discuss the procedure we will follow with each state before a project starts.

We will need to go over the test results with each state when the tests are finished. We will need to provide explanations of the results and not just the raw numbers.

We should urge the states to have a pre-concreting conference before the project starts.

Max Grogg pointed out that to make the long-term field data meaningful, we need to record the weather data for the construction period. Also, accurate traffic data is needed. Halil Ceylan pointed out that sub-base data is also needed.

Jim Parry pointed out that we need to be able to explain to the field personnel what the gypsum phases mean to concrete placement.

TESTS

Bob Risser pointed out that since temperature plays a part in setting time, maybe we should do lab tests at a couple of different temperatures.

Jim Parry and Gordon Smith are a part of the advisory panel for Task 4.

One of the premature stiffening tests is the flow table test Dan Johnston uses. It needs an energy input. This is more than just gravity.

Mauricio Ruiz pointed out that ICAR is knowledgeable in aggregate tests and we could work with them in this area.

Jerry Voight pointed out that the hardness of the aggregate affects the paste bond. Dan Johnston is familiar with the Devual micro hardness test to measure this.

Indiana uses the hardened air test. They have developed a refined test method for this and it is an AASHTO provisional spec TP 59.

Dan Johnston suggested we need to look at Type I and II in addition to blended cements.

John Wojakowski offered that maybe an isocalorimeter would be more practical than a DSC. He thought Larry Roberts of W.R. Grace preferred that instrument. They are cheaper and available for about \$5,000 instead of \$30,000 to \$50,000 for a DSC. It may work better for a trailer.

Jim Parry observed that we need a standard heat signature test.

We need to investigate the water/cement ratio device that Dr. Vince Drnevich from Purdue is developing.

Doug DeGraaf added that we really need a real-time water/cement ratio-testing device.

We will try to develop a practical field application for the AVA. One approach would be to pour a small slab at the plant site beside the trailer to set it on while the test is running.

Another concern was a way to measure the amount of curing compound applied. Also, timing of the application is critical.

PRACTICES MANUAL

Gordon—we should meet with the pooled fund group that is working on technician certification. The tests we develop will be important for them if and when they are adopted by states. This would be the way to create national reciprocity for testing technicians as well as gain acceptance of the tests themselves.

Dale Harrington said the manual needs to address issues head-on, even if they are technical. Bob Risser urged test training materials be included in the practices manual.

Suggestions for those to be involved on an oversight group included:

States – Colorado, Georgia, or North Carolina

Industry

Lafarge – Al Ennis

Ash Grove – Jim Thompson

W. R. Grace – Larry Roberts

Master Builders – Charles Nmai

Euclid - _____ (John W had a name)

SCMs – Ben Franklin

FHWA – Keith Herbold, Midwest Resource Center

Angel Ruiz, Southeast Resource Center

Contractors – Steve Waalkes, ACPA

Suggestions were made for people that might be good at technical editing.

Lady who used to work at Aberdeen (ask Bob R).

Ward Malisch – ACI (he also would be good on the advisory panel).

LAB TOUR

The attendees ended the day with a tour of the PCC Center lab on the Iowa State campus in Town Engineering building.