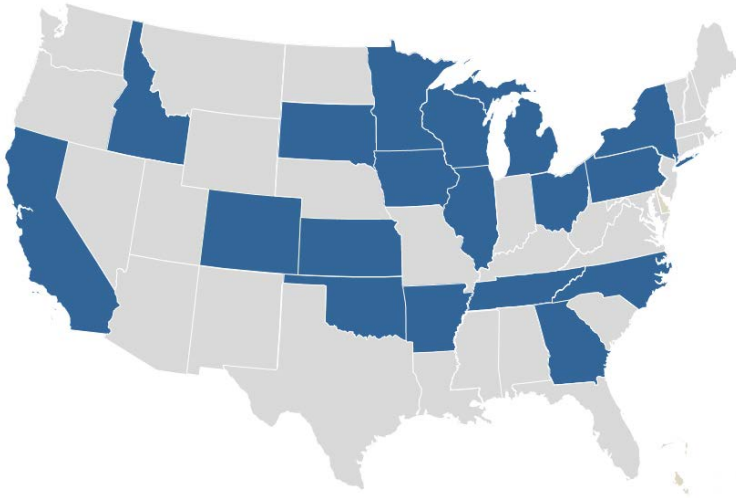


Performance Engineered Mixtures (PEM)
Delivering Concrete to Survive the Environment
November, 2019

PEM Headlines

The [Performance Engineered Mixtures](#) (PEM), TPF-5(368) includes 18 states. Shadow testing continued in 2019 along with open houses and test demonstrations.



18 States + FHWA
& Industry



Kansas PEM Open House

The FHWA Mobile Concrete Technology Center (MCTC) visited a PEM shadow project on I-70 in Gove County, Kansas in early August. Due to the remoteness of the site, an open house was held at the District 1 office in Topeka on August 8 to discuss PEM in a classroom setting followed by test demonstrations and showcasing the MCTC which mobilized from the site. Presentations were made by the CP Tech Center, FHWA, Kansas DOT, MO/KS Chapter ACPA and Koss Construction Co. The event was attended by over 60 people representing DOT, Academia and Industry. Members of FHWA MCTC and Kansas DOT demonstrated the V-Kelly test, Box test, Super Air Meter (SAM) and the surface resistivity test located adjacent to the materials lab.

The CP Tech Center, Illinois DOT and Illinois Chapter ACPA held an open house on August 6 in Moline, Illinois. The shadow project was the nearby I-74 paving. Test demonstrations included the SAM, surface resistivity, V-Kelly and Box test. A total of 42 people attended the event representing DOT, FHWA, consultants and industry.



Illinois PEM Open House

Other shadow projects held this summer included:

- North Carolina (including PEM Open House): I-85 near Salisbury
- Idaho: I-84 between Mountain Home & Cold Springs
- Minnesota: Trunk Hwy 60 near St. James (June) & I-35 W/Lake Street in Minneapolis

Performance Engineered Mixtures (PEM)
Delivering Concrete to Survive the Environment
November, 2019

Upcoming Shadow Projects & MCTC

The FHWA MCTC is planning its 2020 calendar and visits to PEM shadow projects will be confirmed in the coming months. State DOTs are encouraged to share the schedule of planned shadow projects with the research team.

PP84 Update

AASHTO Technical Subcommittee 3c ballot results are in, and revisions to PP 84, Developing Performance Engineered Concrete Pavement Mixtures, passed with no negatives. Several members submitted comments that will be addressed editorially. The most significant revisions to PP 84 included moving the remainder of the test methods in the appendices to standalone standards that are now referenced in PP 84. In addition, the commentary that was formerly one of the appendices, was transitioned to a standalone report that will reside on the AASHTO website. The report can also be updated on an as needed basis to supplement PP 84, and provide in depth information about the standard.

The resulting PP 84 standard should be much less confusing and intimidating for users by reducing a very lengthy document to about a dozen pages. The Technical Subcommittee has a mid-year meeting scheduled for later this month to finalize the editorial revisions, and has an anticipated publication date in the spring of 2020.

Shadow Test Field Report

South Dakota Department of Transportation completed its final report of the shadow project conducted in late 2018. The report includes results of PEM tests performed by the DOT on I-90. The construction contract required the Box Test and SAM testing as part of the mix design phase. Surface resistivity and SAM test data were collected during construction by SDDOT. The CP Tech Center performed additional shadow testing on site as well as hardened air testing. FHWA incentives were utilized for the project. The report is available on the PEM website [here](#).

Shadow Test Data Entry

Iowa and South Dakota shadow project data have been entered into the standard [data entry form](#). State DOTs are encouraged to submit PEM shadow test data to the research team.

Remember to Check Out the PEM Website

The [PEM website](#) includes PEM testing guidance located on the [testing page](#).

Contact

Gordon L. Smith, P.E. – 515-296-0911, gsmith@iastate.edu
Jerod Gross, P.E., LEED AP – 515-964-2020, jgross@snyder-associates.com

For more information, please visit <http://www.cptechcenter.org/pem/>