



## Status and Next Steps With the Paver-Mounted Thermal Profiler (PMTP) For Asphalt Uniformity

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For more information on PMTPs and related technology, contact Stephen Cooper, Pavements & Materials Engineer, FHWA Resource Center, [stephen.j.cooper@dot.gov](mailto:stephen.j.cooper@dot.gov)

This equipment and more are available for loan by the MATC. Learn more at <https://www.fhwa.dot.gov/pavement/asphalt/matc/equipment-loan-program.cfm>

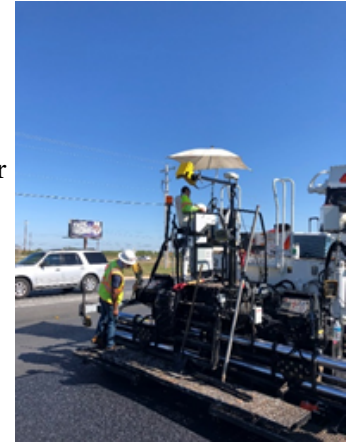
The PMTP shares information on pavement testing programs. To access the full series, visit <https://www.fhwa.dot.gov/pavement/asphalt/matc/technical-documents.cfm>

### Overview of PMTP Use in Abilene, Texas

The Texas Department of Transportation (TxDOT) Abilene District has integrated paver-mounted thermal profiler (PMTP) imaging into its procedures to improve asphalt pavement quality during construction.

PMTPs use temperature sensors to continuously read surface temperatures of the newly placed asphalt mat immediately behind a paver during placement operations. These readings can indicate temperature differentials, usually referred to as thermal segregation. This data can be converted into a visual representation of the temperatures on the roadway, via maps or graphs, that can be viewed in real time from the screed of the paver.

An effective training program on thermal profiles has been crucial to successful PMTP implementation in the District, says Casey McGee, Abilene District Director of Construction. Training enables everyone to understand not only how to use the equipment, but how to interpret the data. "We're performing thermal scans every day on everything," McGee says. Training "gives field inspectors confidence in temporarily halting a paving operation if they see evidence of cold or inconsistent mat temperatures."



*Crews operate a PMTP in the Abilene District, Texas. Photo: TxDOT Abilene*

### Status and Next Steps with the PMTP

On District projects that use a PMTP, paving contractors typically provide PMTP data for each subplot via a thumb drive handed to the field inspector at the end of the day. The data can be downloaded right away or early the next day for analysis. An early challenge for the District's inspector was knowing how to interpret the PMTP data, McGee says.

While TxDOT does not require thermal profiling training for its agency Roadway Technicians, there is an industry-led two-day course offered that can be attended by TxDOT employees or modified for the TxDOT district-level technicians.

In the Abilene District, field inspectors and engineers spend as much as a full day on thermal profiles as part of their Hot Mix Asphalt (HMA) Roadway Specialist training or refresher courses. Part of that day may include 3 to 4 hours with the equipment in the field, McGee says. The District would like to enhance thermal imaging training, especially in response to recent staff turnovers that has brought in some newer field inspectors, he says.

In the meantime, TxDOT is doing a Statewide review of specifications for thermal imaging systems to make the systems more attractive for paving contractors to use, says Travis Patton, Flexible Pavements Section Director for TxDOT's Material and Tests Division. The agency also is looking at practices to address thermal segregation once it is located. Patton says, "We feel [the PMTP] provides a huge benefit."

### TxDOT Abilene's Suggestion for Other Agencies

- Provide sufficient training so that engineers and field inspectors can better understand and utilize the thermal information that PMTPs provide.

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