



Asphalt Assessment Tool

PaveScan® RDM

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Problems that occur during the paving process, such as poor uniformity and significant variations in density, can result in premature failures. These failures include road raveling, cracking and deterioration along joints. The PaveScan RDM system provides accurate real-time measurements to ensure the life and quality of the pavement.

PaveScan offers an easy and affordable assessment tool to nondestructively determine asphalt dielectric during application.

Determine Pavement Non-Conformity

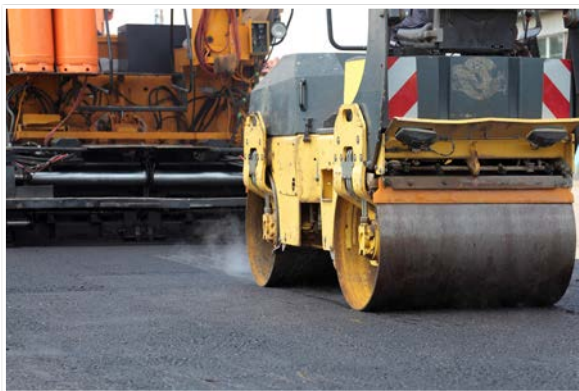
- PaveScan offers real-time data for on-site results by correlating the dielectric measurements with the density of the new pavement

Innovative Technology

- Receive critical data for QA/QC of new pavements
- No site hazards or need to close off work areas as with nuclear density gauges/radioactive alternatives
- Seamlessly integrates with GPS

Flexible, Modular Design

- Easy and efficient operation and data collection
- Available as a small, portable single sensor cart-based system or a three-sensor configuration via extended cart or vehicle configuration



System Components

Cart
One or three sensors
Customized Panasonic ToughBook
Concentrator Box
System Accessories

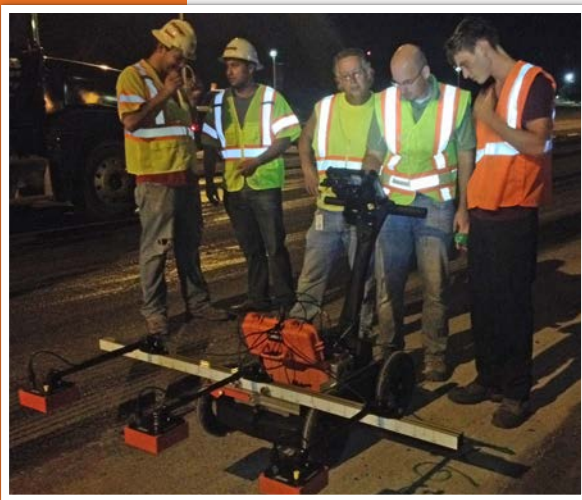




PaveScan Solution

SHRP 2 R06 states “In-place density is a critical factor in determining pavement durability in hot-mix asphalt (HMA). Localized non-uniform zones of mix, termed segregation, often become low-density areas in the mat. Segregation continues to be a major construction-related problem with a significant adverse impact on pavement service life.” As such, GSSI created the PaveScan, a non-nuclear solution that provides full coverage data in real time.

PaveScan is a groundbreaking new technology that identifies areas of non-uniformity in new pavement. It can be deployed with two different survey methods, utilizing the dielectric values or percent voids.



Real-time Survey: Dielectric Display

PaveScan automatically calculates the dielectric measurement of new pavement, the dielectric value is a measure relative to the asphalt mix. It will identify the outliers and anomalies, allowing users to determine the conformity of new pavements and appropriate areas to core.

Gathered Results: Percent Void Display

PaveScan provides users a full coverage survey method to determine asphalt integrity by correlating percent voids with density. To map the percent void content, users first determine areas to core using the dielectric measurements. After the cores are evaluated, the percent void content can be back-calculated for the survey area and displayed on the PaveScan system, or output via a csv file.

PaveScan Data

The PaveScan user interface is graphics based and easy to use. The specialized UI includes intuitive menus, informative system status bar and an innovative real-time data output that allows users to make decisions in real-time.

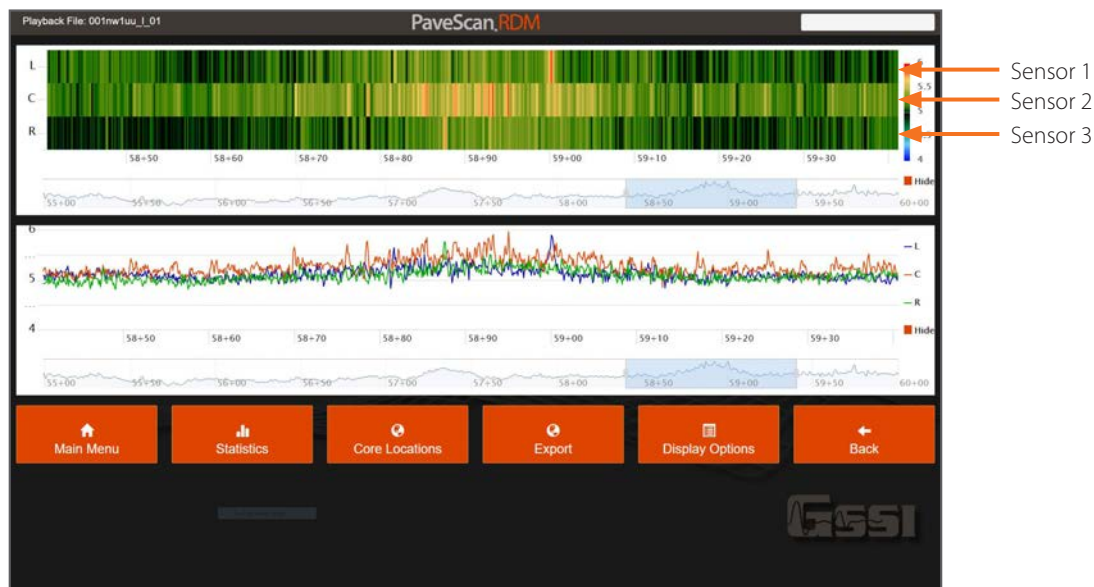
Data Example: Single Sensor System



The color map (top) indicates anomalies in the dielectric measurement, allowing technicians to clearly identify areas of interest.

The line chart (bottom) illustrates a three-sensor system, each line represents the dielectric output of the sensor.

Data Example: Three Sensor System



PaveScan RDM Specifications

Tablet Computer	
System	Panasonic Toughpad® FZ-G1
Data Storage Internal Memory	128 GB SSD
Display	Enhanced 10.1" WUXGA 1920x1200 with LED backlighting
Processor	Intel® Core i5 4310-U vPro
Ports	USB 3.0, Ethernet and Serial
Battery	Li-Ion battery pack (10.8 V)
Operating Temperature	-28°C to 60°C (-18°F to 140°F)
Environmental	IP-64
Drop Spec	MIL-STD-810G
System Specifications	
Data Format	.CSV
Maximum Output Resolution	.4 inch (1 cm)
Operating Mode	Survey wheel distance based data collection
Data Collection Speed	up to 3 mph (4.8 km/h)
Power Source	2 x 10.8V 8.2AH batteries
Display Modes: Collect and Playback	Line Graph Data Contour Map
Diagnostic	Battery indicator status , hard disk capacity
Measurement Specifications	
Repeatability (Dielectric)*	+/- 0.12
Accuracy (Dielectric)*	+/- 0.12
Minimum/Maximum Dielectric	2 to 16
Mechanical	
Dimensions	One sensor cart system - 62 x 25 x 44 in (157 x 63 x 111 cm) Three sensor cart system - 62 x 73 x 44 in (157 x 185 x 111 cm) Individual sensor - 6.2 x 6.2 x 2.7 in (16 x 16 x 7 cm)
Weight	One sensor cart system 71 lbs. (32.2 kg) Three sensor cart system 81 lbs. (36.7kg) Individual sensor 2.5 lbs (1.1 kg)
Environmental	IP-64
Operating Temperature	-28°C to 60°C (-18°F to 140°F)
Storage Temperature	-55°C to 85°C (-67°F to 185°F)

*using an average of 5 measurements

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