

# Additional NDT Services



## High Speed Profilometer

Rii utilizes the Ames model 8300 High Speed Profiler to perform pavement smoothness testing and measurement of International Roughness Index. This is an innovative method of new or overlay pavement smoothness control.

- Profile elevations can be collected at a speed range of 14 - 70 mph
- Graphical display of the laser and profile data
- Easy step by step calibration procedures displayed on screen



## Falling Weight Deflectometer (FWD)

This brand new JILS-20HF FWD is a high force FWD mounted on a two-axle trailer designed specifically for determining structural information of heavy-duty type pavements.

- Simulates the effect of a moving vehicle wheel load
- Obtains pavement temperature and stationing
- Takes tests at specified intervals in both directions of roadway
- Staggers test points to obtain fair distribution of data along pavement



## High Speed Tomography - Ground Penetrating Radar

Ground Penetrating Radar (GPR) is a non-destructive inspection method that uses radio waves to penetrate into pavements, structures, sub-structures or other mediums. It provides information on pavement layer structure, joint conditions, subbase erosion and void spaces under slabs.

- Pavement thickness determination
- Multiple layer thicknesses determination
- Rebar spacing and depth determination
- Unexpected air voids under concrete or asphalt pavement
- Unknown utility location
- AC compaction and density/air void estimates



## High Speed Pavement Survey

The Mobile Asset Collector is a pavement survey vehicle designed for collecting asset inventory data and surveying the existing pavement condition. This vehicle can simultaneously collect: longitudinal profile, crossfall, roughness, surface distress, rut depths, digital video, pavement images, and LIDAR point cloud. The Mobile Asset was used in place of traditional visual survey.

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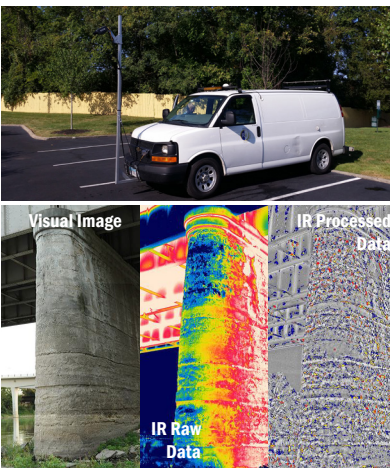
## Automated Dynamic Cone Penetrometer (ADCP)

The ADCP system, manufactured by Vertek, is equipped with an automatic lift / drop mechanism and Windows-based Data Acquisition System (DAS), providing an accurate, fast and efficient test method for evaluating in-situ conditions of new and existing highway and airfield pavements, as well as quality control of new pavement construction. The ADCP-DAS determines in-situ strength and thickness of soils, unbound granular base and subbase layers and subgrades.



## Zorn LWD

The Zorn LWD for Asphalts (ZFG 2000A) is designed to assess the stability of existing asphalt layers and to determine the hardness for broken and stable layers. The use of LWD for asphalt ultimately reduces the cost of testing, increases the reliability of results, and produces high performance and low maintenance pavements.



## Infrared Thermography System

Rii uses an Infrared/Visual System to identify and locate delamination in concrete bridge decks. The system is mounted on a moving vehicle to scan the deck at highway speed. Piers and other bridge concrete structures are also scanned from the ground or a boat.

Rii uses the latest FLIR system, FLIR A6700sc Thermal imaging camera with FLIR cooled InSb detector, with the following features:

- Excellent image quality
- High sensitivity
- High speed image acquisition



## Drone Technology

Rii has access to portable and powerful drones for project site assistance. Drones offer unparalleled professional aerial imaging, allowing trained Rii professionals to better assess storm damage and provide the best solutions possible. Evaluating the storm damage on the ground is only one perspective, an aerial view may open new insights and generate new ideas for rebuilding. Drone technology continues to advance at a rapid rate. Using a UAV drone, professionals are now able to perform infrared scans of buildings and structures, which will help to quickly identify sources of energy efficiencies, destructive water damage and structural issues.