Accelerated Implementation of INTELLIGENT COMPACTION

The intelligent compaction (IC) roller measures and records the stiffness of the soil during the compaction process. This innovative tool is equipped with a global positioning system to create a map that shows the coverage and relative stiffness across the entire surface of each lift of soil. The system controller on each roller is preloaded with a 3-D model of the project to correlate all coordinates, elevations, and stationing. Color coding of the real time information on the operator's control screen indicates soft spots in the soil, allowing operators to know exactly where they need to roll again for optimal compaction and technicians to know which areas may need further evaluation.

THE DELIVERY OF IMPROVED PAVEMENT PERFORMANCE

Research references SPR-3709:
"Intelligent Compaction - Soils, Data Interpretation, and Risk/Reward Assessment"
December 2012 - August 2013
Phillip Dunston, Principal Investigator

INDIANA DEPARTMENT OF TRANSPORTATION

PURDUE UNIVERSITY

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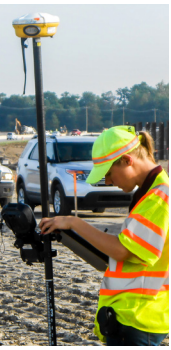
ADVANCED TECHNOLOGY FOR QUALITY ASSURANCE

Based on the success of a recent project in Kokomo on US 31/US 35, INDOT is working to implement this innovative technology. A special provision for IC construction has been revised and another project on US 50 in 2014 is being planned.

The below photos were taken at the Kokomo project during the performance of specialized testing that corresponded with IC data collected from the roller.



ABOVE Left: GPS Testing (primary method); Middle: DCP Testing (primary method); Right: LWD Testing (secondary method)

BELOW FWD Testing (secondary method)