Driving Indiana’s Economic Growth

New Technology in Concrete Testing

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New Testing Technology

- Pavement Thickness for QC or QA
- Concrete Materials Compatibility Test
Thickness Measurement

- MIT Scan T2
  - Magnetic Tomography Technology
  - Measure concrete and asphalt thickness during construction
  - Using metal plate as thickness references
  - No time consuming calibration
  - European Standard
Accuracy

- Specified: 0.5% of the measured depth ±1 mm
- Translates to 0.1 in (less than 3 mm) for 13 in pavement
- Field trials consistently produced less than 0.1 in measurement error
Laser Dip Stick
Impact Echo

- Non-destructive
- Flat concrete surface
- Based on impact echo technology, speed of sound wave
- Very easy to use
- Data acquisition and software included
Impact Echo Thickness Gauge
New Impact Echo

- Multiple Impact Surface Wave
- Impact Echo
- Impact Echo Scanner
- Add-on other NDT testing
New Impact Echo

- Use surface wave to calibrate wave speed
- No concrete block for calibration
- Integration with other NDT testing
- Better data acquisition
Air Void Analyzer

- Measure air entrained in fresh concrete
- Does not measure entrapped air
- Few State DOTs use as standard testing
- Fairly accurate in determining air content
Air Void Analyzer
Coffee Cup Hydration Testing

- Monitor heat of hydration of cement
- Determine compatibility of concrete materials
- Early screening for mix design approval
Foam Drainage Test

- Evaluate stability of air void system
- Good screening tool for mix design approval process
- Avoid lack of air entrainment in hardened concrete