

## NON-DESTRUCTIVE PAVEMENT THICKNESS MEASUREMENT USING PULSE INDUCTION TECHNOLOGY

The MIT-Scan-T2 (T2) is a commercially available device that uses pulse induction technology to measure pavement thickness nondestructively. A metal target must be pre-placed on the top of the base. The MIT Scan T2 device detects the plate, and pulse induction is utilized to determine the thickness of the concrete pavement. The accuracy and repeatability, when compared to measuring core lengths, is within  $\pm 2$  mm based on data collected to date on several field projects.

The service life of a concrete pavement is significantly influenced by the pavement thickness. Taking cores during concrete pavement construction is an important quality assurance activity for the agencies. However, coring is destructive, expensive and time consuming (coring, inspection, handling, measuring core lengths, patching core holes etc).

MIT Scan T2 offers several benefits over coring including lower costs, faster measurements (measurements can be taken as soon as the pavement can be walked upon), larger number of locations (resulting in more robust statistical analysis), eliminates the need to cut cores on new pavements and reduces the need to patch core holes.

The cost per measurement, including the cost of the equipment and targets, is significantly cheaper than taking cores. Based on conversations with DOT personnel, it costs approximately \$90-\$110 per core. The cost per measurement (including the target) using the T2 is less than \$20. Due to the low cost per measurement, measurements can be taken at more locations.



Iowa DOT has realized the benefit of using the MIT Scan T2 and has been using it as part of their specifications since 2010. Several FHWA field trials have shown that the MIT Scan T2 works well over a wide range of concrete pavement thicknesses and base conditions.

Cores are cut from brand new concrete pavements all over the country to verify the pavement thickness. Using this technology, pavement thickness can be measured with the same level of accuracy as taking cores but by nondestructive means and with significant cost savings to DOTs.

### Vendor

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Price: \$20,000

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