

# MIT-SCAN-T3

Precise and non-destructive determination of layer thickness on asphalt and concrete in compliance with ASTM E3209/E3209M, US AASHTO Standard T359, European Standard EN 12697-36 and German Standard TP D-StB 12

THE SMART PRECISION



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# MIT-SCAN-T3

## Precise and non-destructive determination of layer thickness on asphalt and concrete

The measuring device MIT-SCAN-T3 was developed for the non-destructive and precise analysis of asphalt and concrete pavements. Unbound courses of the upper pavement structure (frost protection layer and aggregate base layer) can also be assessed.

### AREAS OF APPLICATION

- ✓ Quality assurance self-monitoring
- ✓ Contract compliance audits
- ✓ Site acceptance testing
- ✓ Road wear testing
- ✓ Warranty audits
- ✓ Road maintainability audits
- ✓ Road rehabilitation audits

### ADVANTAGES



#### Rapid and efficient

- Immediately ready for use
- No on-site calibration necessary
- Fast reflector location (search mode)
- No complex search of reflector center
- Automatic plate detection (reflector)
- Measurement including analysis in less than one minute (measuring mode)



#### Cost-effective

- Durable device with a long service life
- Suited to construction environments
- Self-assessment and quality assurance during paving
- Effective control of paving deviations
- Swift inspections of large road sections



#### Precise

- Very high measurement accuracy:  $\pm(1 \text{ mm} + 0.5 \% \text{ of measured value})$
- High resolution (800 data points per measurement)
- Exact and reproducible measurement results



#### Non-destructive

- Measurement by simple run over the pavement surface
- No requirement for mechanical core drilling



#### Flexible

- Robust and compact hand-held instrument
- Safe transport in high-quality MIT-SCAN-T3 carrying case (car suitable)
- Measures thickness on hot asphalt, milled surfaces and concrete
- Moisture and wet layers do not effect results



#### Sustaining

- Non-damaging to pavement surface
- Mindful of nature and environment
- Emission-free

## MIT-SCAN-T3

Robust and compact hand-held device for precise and rapid on-site inspections of road pavements



Ergonomical and lightweight, GPS module, powerful battery



Intuitive and user-friendly operation



Automatic plate detection, user-friendly menu, backlit display



Variably adjustable telescopic handle up to 140 cm



Robust sensor unit for use also on hot asphalt and in wet weather



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## ACCESSORIES

The following accessories are available for the MIT-SCAN-T3



**Wheeled spacer**  
For functionality testing



**Reflectors**  
Choice of smaller and larger reflectors



**Charger & second battery**  
For external charging of a second battery



**Carrying case**  
High-quality and sturdy, car suitable

## SOFTWARE



### MIT's project software

MIT's project software enables additional processing of measurement data at the PC. The program processes measured data from both two-layered and three-layered road constructions:

- ✓ Preparation of site plans at the PC
- ✓ Automatic processing of measured data
- ✓ Correction of construction project specifications
- ✓ Data transfer via USB storage device
- ✓ Backup and archiving of measurement data
- ✓ Control of measurement points using GPS
- ✓ Generation of form sheets (acc. to TP D-StB 12)



### MIT-ProAsphalt

MIT's evaluation software supports users in the calculation and evaluation of construction projects:

- ✓ Reading of measurement data in different formats
- ✓ Fast & easy parameter input
- ✓ Reliable evaluations
- ✓ Generation of reports



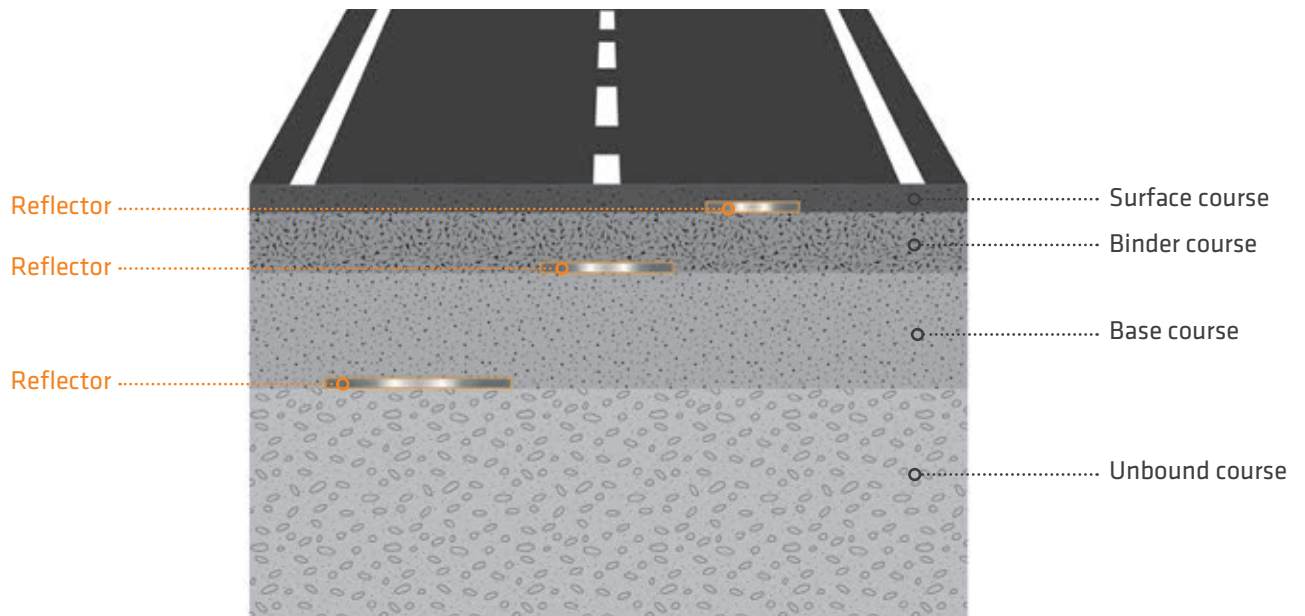
### MIT-SCAN-T3 APP

Application for MIT-SCAN-T3 to manage measuring data on site with your smartphone. It enables the operator to create measuring reports and share data with other persons involved. The application is available at Google Play Store as well as for iOS at Apple Store.

- ✓ Connecting the MIT-SCAN-T3 with your smartphone
- ✓ Quick summary of the current measurement situation
- ✓ Management of measuring data - also on site
- ✓ Creating reports
- ✓ Sharing data nice and easy

# PRINCIPLE OF FUNCTION

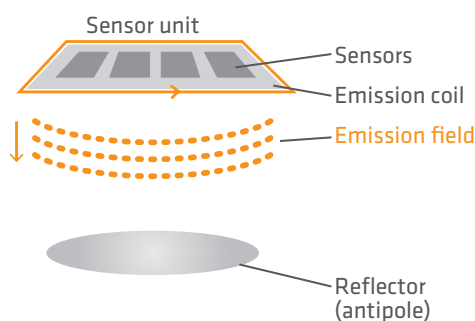
The MIT-SCAN-T3 works with a further developed technology based on the eddy current principle called **pulse induction**. The device's outstanding characteristics are high accuracy and stability in combination with a low susceptibility to interference. This is possible through the collection of large volumes of measurement data. The electromagnetic thickness measurements require metal reflectors to be installed beneath the layers to be measured. The metal reflectors are placed during the paving process directly in front of the machine.



Cross-section of an asphalt road pavement

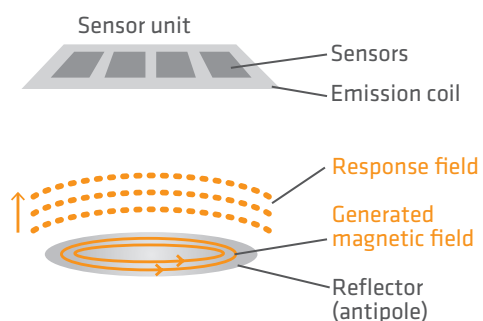
# MEASUREMENT

Pulse induction utilizes the characteristics of electromagnetic fields and their transmission.



### Emission field

The sensor unit in the MIT-SCAN-T3 generates a time-dependent magnetic field, the emission field. As it spreads out, this field reaches the installed measurement reflector, the antipole.



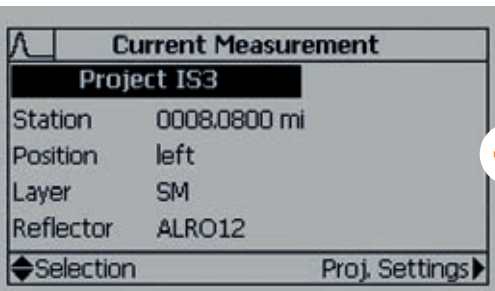
### Response field

Upon contact, induces eddy currents inside the antipole, which generates a time-dependent magnetic field. This response field spreads out and is received by the MIT-SCAN-T3 device's sensor unit. The sensors detect and record the time-dependent decay of the response field. From this data, the MIT-SCAN-T3 quickly, accurately and non-destructively calculates the layer thickness - measured from the underside of the installed reflector up to the road surface top.

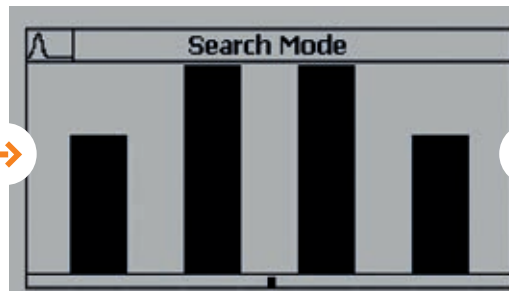
# MEASUREMENT PROCEDURE

Precise and non-destructive determination of layer thickness on concrete and asphalt in less than a minute

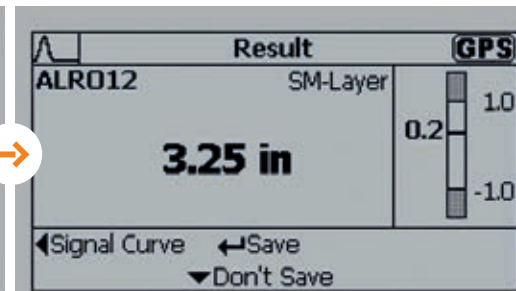
Measurement mode



Search mode



Result display



## SPECIFICATIONS

<b>Measurement range</b>	1.5 to 50 cm based on reflector type
<b>Measurement accuracy</b>	$\pm(1 \text{ mm} + 0.5 \% \text{ of measured value})$
<b>Resolution</b>	1 mm
<b>Asphalt temperature</b>	up to 110 °C
<b>Operating temperature</b>	-10 °C to +50 °C
<b>Memory capacity</b>	up to 5,000 data sets
<b>PC connectivity</b>	USB connection, data transfer via MIT's project software to MS Excel or MIT-ProAsphalt
<b>Power supply</b>	NiMH battery 12V/2Ah
<b>Battery life</b>	8 hours or approx. 1,000 measurements
<b>Recharge time</b>	1.5 hours
<b>Dimensions</b>	Device: 75 cm x 40 cm x 26 cm Carrying case: 85 cm x 50 cm x 35 cm
<b>Weight</b>	Net weight: 4 kg (device) Gross weight: 18 kg including packaging and accessories

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