**Greenwood TSD - the Traffic Speed Deflectometer** is an innovative Rolling Wheel Deflectometer measuring pavement response to applied load. The TSD technology is developed by Greenwood Engineering and has initiated a shift of paradigm in pavement engineering worldwide.

**Greenwood TSD** provides continuous bearing capacity results while following the flow of traffic.

**Greenwood TSD** is developed, designed and produced by Greenwood Engineering. The technology is mounted in a refrigerated trailer. The standard configuration includes 7 Doppler lasers. The standard configuration can be supplied with additional custom made solutions to meet customers specific requirements. This makes each Greenwood TSD unique.

**Technical Description**

- TSD uses Doppler technology.
- Special designed trailer and wheel hubs, for measuring close to the wheel tires.
- Servo systems and inertial units continuously monitor and control the position of the Doppler sensors.
- An odometer mounted to determine distance travelled and driving speed.
- A special ballast load mounted below the trailer, can be removed or rearranged. This feature allows the TSD to measure pavement responses to various load levels.
**Features**

- Measures the bearing capacity at traffic speed (pavement fatigue/residual life can be estimated)
- High measuring capacity
- Detailed information about the network bearing capacity
- Minimizes the need for traditional stationary or slow moving, discrete measuring techniques
- Economical per measured kilometre
- Continuous data with high accuracy and resolution
- Results are repeatable and reproducible
- Post processing software included

**Data Example**

Since 2005 the state road network in Denmark (~ 3300km) has been measured with the TSD. The figure shows a comparison of the SCI300 of the same road, from 2005, 2006 and 2007. Repair works were conducted on the road from km 6 to 7.5 between 2005 and 2006, which can be seen in the lower SCI300 level.

**Output Example**

Output from TSD can be displayed in web-based map systems. The example below allows the use to click on a position and see more details as deflection bowl, SCI300, AREA, and more.

**TSD Reference List**

- Australia: ARRB
- China: RIOH
- China: Shanghai Municipality
- Denmark: Danish Road Directorate
- Germany: BAST
- Great Britain: Highways England
- Italy: ANAS
- Poland: IBDiM
- South Africa: SANRAL
- South Africa: VNA
- USA: ARRB
- USA: FHWA / Pooled Fund Project