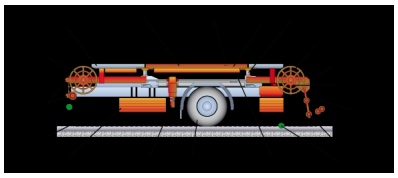
High-performance equipment for measuring deflection and radii of curvature in road beds, airports and platforms

The equipment is mounted on a two-axle truck whose twin rear axle is ballasted with a load that can be adjusted between 8 and 13 tonnes. Euroconsult Nuevas Tecnologías S.A. holds Ministry of Infrastructure approval and certification for seven such units.



Applications of the curve meter

- Acoustic structural analysis for the planning and prioritising of reinforcement work.
- Road bed management systems for determining optimum conservation strategies.
- Calculation of reinforcements.
- Assessment of adhesion between different layers in road beds.
- Acoustic analysis of airport runway beds and railway track beds and subgrades.
- Establishment of the zero point for deflection so as to check for changes over time and assess remaining useful lifetime.
- Layer by layer assessment of deflection levels for comparison with design values.
- Monitoring of homogeneity in platform stabilisation treatments during construction.

Operation

Measurements are taken at a speed of 5 m/s (18 km/h), with one reading being obtained for every 5 m. Road bed deformation is determined over a 4 m length at each point. 3 of those 4 m correspond to the back of the truck, behind the rear axle, where the front wheels have hardly

any influence. Deflection and curvature radius data are then processed and corrected for temperature and humidity conditions so that a homogenous pattern of zones can be formed.

Main technical characteristics

- 15 m chain with three sensors, automatically synchronised with the forward movement of the truck.
- Deflection basin defined by 100 points along a basic measuring length of 4 m
- Measurements taken at the rear of the axle with a 13 tonne load (adjustable between 8 and 13 tonnes) to eliminate any influence of the front axle.
- Wide-screen front camera with x, y & z co-ordinates for inventorying.

Data processing

The data recorded by the unit are analysed with in-house programs that provide applications for managing deflection and associated images in computerised form. They can also be integrated into pavement management systems already in place. We also offer the possibility of developing tailor-made road surface management systems.