



ENVIRONMENTS



Racetracks



Ports



Industrial



Airports



Residential



Rural



Motorway



Falling Weight
Deflectometer

FWD is a non-destructive testing device that evaluates the structural condition of pavements.

The Falling Weight Deflectometer (FWD) is a trailer-mounted system that applies a dynamic load, or “falling weight”, to a pavement surface and measures the resulting seismic response using geophones to capture changes in the pavement’s velocity or “deflection” - ideal for both road and airport testing.

FWD data is a cornerstone of pavement design and is extensively used worldwide to assess the performance, durability, and expected lifespan of pavements. It is a mandatory requirement for all NZTA and Auckland Transport reseal and rehabilitation projects. Enabling engineers to make informed decisions about pavement design, maintenance, and rehabilitation without damaging the road.

Our fleet also includes the FAST FWD.

Benefits

- Conducts rapid automated, structural pavement testing suitable for global applications
- Individual layer modulus determination
- Identifies specific pavement layers that are at risk of failure, offering more precise analysis than simple bearing capacity assessments
- Ideal for QA/QC of newly constructed pavements, ensuring compliance and performance
- Compares multiple rehabilitation options, such as plane-off and recycling, rather than simply applying overlays
- Provides accurate, reproducible, and repeatable structural data for informed decision-making
- Real-time and automated monitoring of load cell, geophones, and data variations ensures the highest quality data collection
- Mechanistic-empirical analysis applicable to a wide range of pavement structures.



Images: (left) FWD on-site capturing data. (right) Road survey data interpretation

Industry Specifications

Our FWD testing adheres to Austroads ASTM AG:AM/T006 standards.

FWD Software

The FWD pavement response is analysed with Dynatest's ELMOD (Evaluation of Layer Moduli and Overlay Design) software, which calculates the elastic moduli and stresses of each pavement layer. This analysis identifies the weakest layer, estimates residual life, and provides optimised rehabilitation recommendations, saving both time and resources for our clients.

Location

Our FWD fleet is based in Tauranga and Christchurch with the ability to survey nationwide.

Contact Information

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Need more information?

At Road Science, we're committed to providing innovative solutions backed by engineering expertise. If you have any questions about this service, need technical guidance, or want to discuss how it fits your specific project needs, our team is here to help. Contact us today for expert advice and tailored support. Contact us via **0800 180 200** or visit our website at **roadscience.co.nz** to learn more.

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